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FEDERAL RESERVE'S FIRST MONETARY POLICY REPORT FOR 1990

HEARING

BEFORE THE

COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS UNITED STATES SENATE

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

ON

OVERSIGHT ON THE MONETARY POLICY REPORT TO CONGRESS PURSUANT TO THE FULL EMPLOYMENT AND BALANCED GROWTH ACT OF 1978

FEBRUARY 22, 1990

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CONTENTS

THURSDAY, FEBRUARY 22, 1990

	Page
Opening statement of Chairman Riegle	1
Opening statements of:	
Senator Garn	2
Senator Heinz	3
Senator Shelby	4
Senator D'Amato	5
Senator Graham	6
Senator Dixon	7
Senator Sanford	63
Senator Kerry	65

WITNESS

Alan Greenspan, Chairman, Board of Governors, Federal Reserve System	7
Prepared statement	14
Economic and monetary policy developments in 1989	15
The ultimate objectives and medium-term strategy of monetary policy	17
Monetary policy and the economic outlook for 1990	20
Risks to the economic outlook	23
International financial markets and monetary policy	25
Considerations regarding immediate release of FOMC operating decisions	30
Monetary policy report to Congress	35
Response to written questions from:	
Senator Riegle	98
Senator Kerry	108
Senator Pressler	135

FEDERAL RESERVE'S FIRST MONETARY POLICY REPORT FOR 1990

THURSDAY, FEBRUARY 22, 1990

U.S. SENATE,
COMMITTEE ON BANKING, HOUSING, AND URBAN AFFAIRS,
Washington, DC.

The committee met at 10 a.m., in room SD-538, Dirksen Senate Office Building, Senator Donald W. Riegle, Jr. (chairman of the committee) presiding.

Present: Senators Riegle, Sarbanes, Dixon, Sasser, Sanford, Shelby, Graham, Kerry, Garn, Heinz, D'Amato, Mack, and Pressler.

OPENING STATEMENT OF CHAIRMAN RIEGLE

The CHAIRMAN. The committee will come to order.

Let me welcome all in attendance. Today, we have with us Alan Greenspan, the Chairman of the Federal Reserve Board, who will discuss the Fed's semiannual report on its monetary policy intentions, as required by the Full Employment and Balance Growth Act of 1978.

I think it's worth covering a few points and then I will call on my colleagues before we hear from Chairman Greenspan.

We have now gone some 7 years without a recession and without a major resurgence in inflation and certainly the Fed has played an important role during this period. At the same time, we have suffered through some of the highest interest rates adjusted for inflation in our history and even with enormous inflows of foreign capital, all of which will have to be paid back some day, these high real interest rates have obviously had the effect of curtailing net investment in productive capital activity in the United States. In recent years the share of our net production devoted to new facilities is the lowest since the Great Depression.

Obviously these are alarming trends when one looks at our trade deficit and the fact that we'd like to continue to consume a large volume of goods and services, and there's an obvious problem if we are not producing as much as we are consuming.

High interest rates at home have certainly not helped U.S. firms compete overseas. Our trade deficits have been huge, turning us from the world's largest creditor to the world's largest debtor. In the midst of our current prosperity, such as it is, employment in manufacturing has been stagnant at best and has declined steadily over the past year.

The sudden rise last month of long-term interest rates follows similar increases overseas, and they raise a serious question, which we raised with Chairman Greenspan here just several days ago and postponed discussion until today, and that is the degree to which our own monetary policy latitude may well be affected in larger and larger degree by events taking place in the rest of the world. Financial events and circumstances may now have reached a size and magnitude in the aggregate that our ability to fine-tune our own economy through monetary policy may be changing in important ways and I think we need to understand the dynamics that are at work in that area. You were kind enough to respond in your formal statement to those concerns, and we will have a chance to discuss that somewhat further today.

I am also interested in hearing your thoughts on the increased use of debt throughout our economy. Obviously the failure of Drexel Burnham brings into focus the issue of junk bonds and the role that they play. But I would be interested in your thoughts on what other risks there may be out there in our financial institutions—whether in thrifts, insurance companies, pension funds, investment banks, and possibly others—as a result of the build-up of debt in general and more particularly some of the effects of recent problems in the junk bond market that may spill over in other directions.

Those will be some of the areas that we will want to get into with you this morning.

Let me call on Senator Garn.

OPENING STATEMENT OF SENATOR GARN

Senator GARN. Thank you, Mr. Chairman.

Chairman Greenspan notes in his prepared statement that last year marked the seventh year of the longest peacetime expansion of the U.S. economy on record. I think that's a remarkable achievement which should not be overlooked as we focus on the remaining macroeconomic problems like inflation and the trade deficit.

While I have sometimes been a critic of monetary policy myself, I nevertheless recognize the extent to which the by-and-large prudent policies of the Federal Reserve deserve the credit for our economic achievements. Far too often the other parts of Government have complicated the Fed's job rather than helping out.

This was certainly true when Congress in 1986 refused to recapitalize FSLIC. It's true today that those responsible for fiscal policy continue to depress our Nation's saving rate by inflating the Federal deficit. But fiscal policy is not the only place where the Fed could use some help. While we continue to enjoy the benefits of this economic expansion that began in 1982, now is the time for us to be making the structural changes that will enable our economy to respond as it should to the economic challenges that clearly lie ahead.

In this regard I certainly want to compliment Chairman Riegle for his efforts to focus Congress' attention on international competitive challenges before us. He is doing an outstanding job in articulating the challenges to the American financial services industry in particular that are continuing to grow both in Europe and in

Asia. I support Chairman Riegle in his efforts to prepare our financial institutions and our regulatory structure for the challenges ahead.

Chairman Greenspan, I know you support these efforts as well and I hope you will use today's hearing as another opportunity for you to try to build a sense of urgency that we do need to proceed with legislative action in these areas. As important as monetary policy is and the things that you are here to discuss today, I am sure you know of my frustration after more than a decade of trying to modernize our domestic financial structure to be competitive in an increasingly competitive international and global marketplace. So I would hope you would have some comments today on that need for modernization within our own country.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Garn. Thank you for your personal comments.

Senator Heinz.

OPENING STATEMENT OF SENATOR HEINZ

Senator HEINZ. Mr. Chairman, I commend you on having this hearing. Of course, we are required to do it. Nonetheless, it's important to give the public a sense that we are not only interested in, but concerned about, the management of the economy; particularly the critical role the Federal Reserve plays in it.

I just want to indicate to Chairman Greenspan that I don't know of a time in the last 4 or 5 years when his stewardship and careful judgments could be more important to the health of the economy than they are now. It's my impression that our economy, because of the situation with interest rates, is balanced on a knife's edge and that the balancing act is possibly going to be determined by forces beyond our control. Those forces begin with the fact that we need to import close to $180 billion worth of capital annually in order to pay our bills and to the extent that other nations raise the cost of borrowing to themselves, they raise it to us. To the extent that the Japanese, the West Germans, or other demands for credit such as the opening of Eastern Europe raise the cost of funds they will surely be felt here.

This of course puts Chairman Greenspan and the Federal Reserve into the most unusual position of having to take into account in the conduct of monetary policy in this country those forces over which they have modest or little control other than through the articulate persuasiveness of the chairman.

I have some questions in that regard. I just want to say to Alan Greenspan that there has never been, in my judgment, in recent times a more difficult period for the economy of this country. I think it's more difficult than when we went through the LDC debt and potential default problem. That was money that was a sunk cost. What we are going through now will have a very large potential real effect on capital markets and I am glad, Alan, that you are here to do that job and to tell us how you are going to do it.

The CHAIRMAN. Thank you very much, Senator Heinz.

Senator Shelby.

Senator SHELBY. Mr. Chairman, I have a written statement that I would like to introduce for the record. Then I have just a few brief comments, Mr. Chairman.

A lot of the Americans—I won't say for the first time—but a lot of them are now realizing the impact that countries like Germany and Japan when they raise their interest rates and we are competing for their funds—what that means to this country. You, Mr. Chairman, have been talking about for a long time and some of us on this committee about a low savings rate where we are dependent on foreign markets to finance our debt here and this is really coming through now. It's obvious that this is some of the pressure that we're facing and been facing in the last few days and when you're into that—I don't know if you are going to get into that in your remarks—but I certainly would like to pursue it in questioning.

Thank you, Mr. Chairman.

OPENING STATEMENT OF SENATOR SHELBY

Senator SHELBY. Mr. Chairman, I am glad that you have scheduled today's hearing. I appreciate the opportunity to hear from Chairman Greenspan his perspective of the future.

Chairman Greenspan, I have read your testimony and heard the press reports that indicate that you believe that the recessionary trend of the past several months has bottomed out and that we can expect to continue on the path of economic expansion. That is indeed good news.

While we've acknowledged for quite some time that we have entered a global era, recent increases in long term U.S. rates which followed increases in rates in Japan and West Germany, demonstrate that the economy of the United States is inextricably linked with those of other capitalist nations. To an increasing degree, issuers of debt compete for the same pool of funds from investors around the world.

We cannot turn back the clock nor will we ever again see markets delineated by geographic boundaries. Yet we must recognize our dependency on foreign investors and the consequences they can yield on our economy. Yes, we seem, at present, to be continuing along the path of economic expansion. Yet we remain on this path at the leniency of our creditors.

It is imperative that we minimize our dependency on foreign investors, by getting our fiscal house in order. Disappointingly, the administration, in its first budget, demonstrated the same unwillingness of the previous administration to make the tough choices, to determine where the cuts are going to come from, thus leaving Congress to fight it out.

Chairman Greenspan, the recessionary trend of the past several months has made me concerned that the engine driving the U.S. economy may be running out of steam. Whether or not that is indeed the case at the moment, I believe that it is past time to start correcting the excesses of the past decade in order to minimize the severity of a recessionary correction. It is my hope that you will use your influence with the administration to address the issue of utmost importance, the budget deficit and must admit that

I am somewhat disappointed that such an influence is not more obvious in this year's budget blueprint.

I appreciate your being here today and look forward to the question and answer period.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator Shelby.

Senator D'Amato.

Senator D'AMATO. Mr. Chairman, if I might take the license of doing the same, and that is submitting my prepared statement as if read in its entirety for the record, and just make some observations.

First of all, let me welcome Chairman Greenspan and echo the sentiments of both of my colleagues, Senator Heinz and Senator Shelby, as it relates to the importance and difficulty of the job that you, Mr. Chairman, have. I do believe that perhaps you have helped to achieve that elusive goal of the soft landing.

I also believe that it is absolutely imperative that we do all that we can to achieve an increased savings rate. I take some heart and some comfort in your remarks and I think you have been the clarion voice years ago before your stewardship at the Fed saying that this is essential. So I echo Senator Shelby's comments and of course that goes to the point that Senator Heinz was making. If indeed interest rates in Japan and West Germany are higher, then of course our own borrowing is going to be affected. So consequently the need to bring down that budget deficit and to increase our own savings rate becomes so much more important and I would like to pursue that when we have an opportunity to put some questions to you.

But again, I welcome the Chairman and I think that once again you have been able to see us through the dire consequences and predictions of the depression or the recession and that it really has been a soft landing.

OPENING STATEMENT OF SENATOR D'AMATO

Senator D'AMATO. Mr. Chairman, I join you in welcoming Chairman Greenspan. I also welcome the Fed's report on monetary policy. Once again we have observed the effects of the Fed's steady hand on the money supply controls. It appears that we have avoided the fruition of the dire predictions of recession and perhaps have actually achieved the illusive "soft landing".

At least, it appears now that Chairman Greenspan has steered a course in monetary policy that has slowed growth without choking off the robust economy which has created jobs and increases opportunity for all Americans. He and his colleagues at the Fed are to be congratulated.

I am also heartened that disposable household income is growing faster than consumer spending. This has resulted in a healthy 5¾ percent increase in the savings for the last quarter of 1989. I continue to believe that the tax code needs to be amended to correct its bias against savings. However, improvement in the savings rate, with or without changes in the tax code is good news and I am certain that Chairman Greenspan is pleased as well.

It is unfortunate that it now appears that progress against inflation is going to be difficult. However, so long as the Federal Government continues to run large budget deficits we can expect only one miracle at a time from the Federal Reserve System. The "soft landing" and the prospects for continued moderate GNP growth demonstrate the resilience of the American economy. I hope that someday we in the Congress will order our fiscal house and really do something about inbedded inflation.

The CHAIRMAN. Thank you, Senator D'Amato.

Senator Mack.

Senator MACK. Thank you.

Welcome, Mr. Chairman. I look forward to your comments this morning and will be raising a question on monetary policy and price stability, but I think I will just wait until the question period and look forward to your comments.

The CHAIRMAN. We have other colleagues enroute and Senator Graham from Florida has just arrived. Senator Graham, as you get seated, let me say that if you would like to make an opening comment at this point we would be happy to have it.

Senator GRAHAM. Thank you, Mr. Chairman.

I have an opening statement which I will file for the record.

OPENING STATEMENT OF SENATOR GRAHAM

Senator GRAHAM. Mr. Chairman, it is a pleasure to have Chairman Greenspan report to us today on the conduct of monetary policy. As the Chairman has said before, monetary policy alone cannot provide the answers to our economic problems. The United States needs to have complimentary trade and fiscal policies, and to coordinate these policies with the administration's goals, the Congress and our trading partners.

Chairman Greenspan, earlier this week you predicted inflation would be between 4 percent and 4.5 percent this year which was more or less the same as in 1989. Wednesday, the Consumer Price Index was announced which illustrated a larger than expected jump. This rise does not bode well for interests rates staying lower in the future.

The Federal Reserve in the past has been successful in lowering interest rates as well as inflation but rising rates as you know impact the savings and loan problem as well as the Latin American debt situation which the United States is currently in the middle of the solutions.

Also of concern is the impact of overseas dollars on our monetary policy due to the budget deficit.

Mr. Chairman, we look forward to your testimony this morning.

The CHAIRMAN. With that, Chairman Greenspan, we have your statement and we will make it a part of the record and I would hope that in the course of your remarks to us that you would feel free to digress and emphasize points you feel strongly about. If there is anything that has come up in the course of the discussion that relates to something in your prepared remarks that you want to focus on that's separate from what is in your formal statement I want you to feel free to do that.

Before we begin I have a statement from Senator Dixon.

OPENING STATEMENT OF SENATOR DIXON

Senator DIXON. Mr. Chairman, I am pleased to be here this morning as the Senate Banking Committee conducts the first hearing of the new decade on monetary policy. I look forward to the thoughtful testimony of Federal Reserve Board Chairman Alan Greenspan.

In the past 6 months our world has experienced extraordinary changes. Cold war tensions have dramatically decreased. Waves of political and economic freedom have swept eastern Europe. Drexel Burnham, a once mighty financial giant, has filed for bankruptcy. Each week, new historic headlines develop.

Fortunately, through all these upheavels, our economy has stayed on a fairly steady course. Unemployment has remained stable. Inflation has not taken off—despite yesterday's reported consumer price jump, which was related directly to December's unusually harsh weather. The market did not collapse with Drexel's demise. And the economy seems to have avoided entering a recession. Skillful handling of monetary policy by the Federal Reserve deserved much credit.

With all of this good news, I am concerned that we are seeing only these new, magnificent trees; we are not seeing all of the changes in the forest, nor the small fire burning within its wooded heart. I am concerned that as the winds of international competition gust and blow that fire will spread and that forest will wither.

It is easy to be sanguine when our economy appears healthy. Still, the Federal budget and trade deficits, a low savings rate, inadequate research and technological development, calcified financial regulation, mediocre education, and problems in our inner cities, all threaten our current prosperity. They are the fires which threaten to destroy our forest of growth and bounty.

The economic news which we hear today should not pacify us. Instead, it should spur Congress and the American people to action so that our much admired prosperity and economic freedom will continue to flourish.

We would be pleased to hear from you now.

STATEMENT OF ALAN GREENSPAN, CHAIRMAN, BOARD OF GOVERNORS, FEDERAL RESERVE SYSTEM

Mr. GREENSPAN. Thank you very much, Mr. Chairman.

I, as always, appreciate the opportunity to testify on the Federal Reserve's semiannual Monetary Policy Report to the Congress.

My prepared remarks go into some detail on our monetary policy actions and plans in the context not only of the current and projected state of the economy, but also against the background of our longer-term objectives and strategy for achieving them.

The prepared testimony also addresses some issues for monetary policy raised by the increasingly international character of financial markets, and I will be glad to pursue that issue in some detail as the question period unfolds.

Last year, as has been remarked, represented the seventh year of the longest peacetime expansion of the U.S. economy on record. Some two and a half million jobs were created and the civilian unemployment rate held steady at 5¼ percent. Inflation was held to a

rate no faster than in recent years, but unfortunately no progress was made in 1989 toward price stability.

Thus, while we can look back with satisfaction at the economic progress made last year, there is still some work to be done.

About a year ago the Federal Reserve policy was in the final phase of a period of gradual tightening designed to inhibit a build up of inflation pressures. Interest rates moved higher through the winter but started down when signs of more restrained aggregate demand and of reduced potential for higher inflation began to appear.

As midyear approached a marked strengthening of the dollar on foreign exchange markets further diminished the threat of accelerating inflation and economic data suggested that the balance of risks had shifted toward the possibility of an undue weakening in economic activity.

With M2 and M3 below the lower bounds of their annual ranges in the spring, the Federal Reserve in June embarked on a series of measured easing steps that continued through late last year. Across the maturity spectrum interest rates declined further to levels of about 1½ percentage points below March peaks.

Reduction in inflation expectation and reports of a softer economy evidently contributed to the drop in rates in long-term markets. The decrease in short-term rates lifted M2 to around the middle of its annual range in the latter part of the year.

So far this year the Federal funds rate has remained around 8¼ percent, but rates on Treasury securities and longer-term private instruments have reversed some of their earlier declines. Investors have reacted to stronger-than-expected economic data, a run-up in energy prices, and increasingly attractive investment opportunities abroad, especially in Europe.

Monetary policy was conducted again last year with an eye on long-run policy goals, and economic develops in 1989 were consistent with the Federal Reserve's medium-term strategy for reaching them.

The ultimate objective of economic policy is to foster the maximum sustainable rate of economic growth. By ensuring stable prices, a necessary condition for maximum sustainable growth, monetary policy can play its most important role in promoting economic progress.

The strategy of the Federal Open Market Committee for moving toward this goal remains the same, to restrain growth in money and aggregate demand in coming years enough to establish a clear downward tilt to the trend of inflation and inflation expectations, while avoiding a recession.

If past patterns of monetary behavior persist, maintaining price stability will require an average rate of M2 growth over time approximately equal to the trend growth in output.

During the transition, the decline of market interest rates in response to the moderation in inflation would boost the public's demand for M2 relative to nominal spending lowering M2 velocity. M2 growth over several years accordingly may show little deceleration, and it could actually speed up from time to time as interest rates decline in fits and starts.

Hence, the FOMC would not expect to lower its M2 target range mechanically each and every year in the transition to price stability.

This qualitative description of our medium-term strategy is easy to state, but actually implementing it will be difficult. Unexpected developments no doubt will require flexible policy responses. Any such adjustments will not imply a retreat from the medium-term strategy or from ultimate policy goals. Rather, they will be mid-course corrections that attempt to keep the economy and prices on track.

The easing of reserve pressures starting last June is a case in point. Successive FOMC decisions to ease operating policy were intended to forestall an economic downturn the chances of which seem to be increasing as the balance of risks shifted away from greater inflation.

The FOMC was in no way abandoning its long-term goal of price stability. Instead, it sought financial conditions that would support the moderate economic expansion judged to be consistent with progress toward stable prices.

In the event, output growth was sustained last year, although in the fourth quarter a major strike at Boeing combined with the first round of production cuts in the auto industry accentuated the underlying slowdown.

On the inflation side, price increases in the second half were appreciably lower than those in the first.

Against this background, the Federal Reserve Governors and the Presidents of the Reserve Banks foresee continued moderate economic expansion over 1990 consistent with conditions that will foster progress toward price stability over time. At its meeting earlier this month the FOMC selected ranges for growth in money and debt it believes will promote this outcome.

My testimony last July indicated the very preliminary nature of the tentative ranges chosen for 1990, given the uncertain outlook for the economy, financial conditions, and appropriate growth of money and debt.

With the economic situation not materially different from what was then anticipated, the FOMC reaffirmed the tentative 3 to 7 percent growth range for M2 in 1990 that it set last July. This range, which is the same as that used in 1989, is expected by most FOMC members to produce somewhat slower growth in nominal GNP this year.

The declines in short-term interest rates through late last year can be expected to continue to boost the public's demands for liquid balances in M2, at least for a while longer. M2 growth over 1990 thus may be faster than in recent years, and M2 velocity could well decline over the four quarters of the year absent a pronounced firming of short-term market interest rates.

In contrast with M2, the range for M3 has been reduced from its tentative range set last year. The new M3 range of 3½ to 6½ percent is intended to embody the same degree of restraint as the M2 range, but it was lowered to reflect the continued decline in thrift assets and funding needs now anticipated to accompany the ongoing restructuring of the thrift industry.

The Committee's best judgment is that money growth within these annual ranges will be compatible with a moderation in the expansion of nominal GNP. Most FOMC members and other Reserve Bank Presidents foresee real GNP growth of 1¾ to 2 percent over the year as a whole. Such a rate would be around last year's moderate pace excluding the rebound in agricultural output from the 1988 drought.

A slight easing of pressures on resources probably is in store. Inflation pressures should remain contained even though the decline in the dollar's value over the past half year likely will reverse some of the beneficial effects on domestic inflation stemming from the dollar's earlier appreciation. The CPI this year is projected to increase 4 to 4½ percent as compared with last year's 4½ percent.

Experience has shown such macroeconomic forecasts to be subject to a variety of risks. Assessing the balance of risks between production shortfalls and inflation pressures in the current outlook is complicated by several cross-currents in the domestic and international economic and financial situation.

One risk is that the weakness in economic activity evident around the year end may tend to cumulate causing members' forecasts about production and employment this year to be overly optimistic. However, available indicators of near-term economic performance suggest that the weakest point may have passed.

The inventory correction in the auto industry, a rapid one involving a sharp reduction in motor vehicle assemblies in January, coupled with better motor vehicle sales, seems to be largely behind us. Industrial activity outside of motor vehicles appears to be holding up. Production of business equipment where evidence has accumulated of some stability, if not an increase, in orders for profit margins, is likely to support manufacturing output in the coming months.

Housing starts were depressed in December by severely cold weather in much of the country, but starts bounced back strongly in January in line with the large gain in construction employment last month.

From these and similar data one can infer the beginnings of a modest firming in economic activity. While we cannot be certain that we are as yet out of the recessionary woods, such evidence warrants at least guarded optimism.

There are, however, other undercurrents that continue to signal caution. One that could disturb the sustainability of the current economic expansion has been the recent substantial deterioration in profit margins, and continuation of this trend could seriously undercut the still expanding capital goods markets. However, if current signs of an upturn in economic activity broaden, profit margins can be expected to stabilize.

A more deep-seated concern with respect to the longer run viability of the expansion is the increase in debt leverage. Although the trends of income and cash flow may have turned the corner, the structure of the economy's financial balance sheet weighs increasingly heavily on the dynamics of economic expansion.

In recent years, business debt burdens have been enlarged through corporate restructurings, and as a consequence, interest costs as a percent of cash flow have risen markedly. Responding to

certain well-publicized debt-servicing problems, creditors have become more selective in committing funds for these purposes.

Within the banking industry credit standards have been tightened for merger and LBO loans as well as for some other business customers. Credit for construction projects reportedly has become less available because of FIRREA-imposed limits and heightened concerns about overbuilding in a number of real estate markets.

Among households, too, debt-servicing burdens have risen to historic highs relative to income, and delinquency rates have moved up of late. Suppliers of consumer and mortgage credit appear to have tightened lending terms a little. Real estate values have softened in some locales, although prices have maintained an uptrend in terms of the national averages, especially for single-family residences.

These and other financial forces merit careful monitoring. While welcomed from the supervisory perspective, more cautious lending does have the potential for dampening aggregate demand.

It is difficult to assess how serious a threat increased leverage is to the current level of economic activity. Clearly should the economy fall into a recession, excess debt service costs would intensify the problems of adjustment. But it is unlikely that in current circumstances strains coming from the economy's financial balance sheet can themselves precipitate a downturn.

As I indicated in my prepared text, we expect nonfinancial debt growth to continue to slow from its frenetic pace of the mid-1980s. This should lessen the strain and hopefully the threat to the economy.

Among other concerns recent events have highlighted the complex interactions between developments in the U.S. economy and financial markets and those in other major industrial countries. Specifically, the parallel movements in long-term interest rates here and abroad over the early weeks of 1990 have raised questions: To what extent is the U.S. economy subject to influences from abroad? To what extent, as a consequence, have we lost control over our economic destiny?

The simple answer to these questions is that the U.S. economy is influenced from abroad to a substantially greater degree than, say, two or three decades ago, but U.S. monetary policy is nonetheless able to carry out its responsibilities effectively.

The post-war period has seen markedly closer ties among the world's economies. Markets for goods have become increasingly and irreversibly integrated as a result of the downsizing of economic output and the consequent expansion of international trade.

The past decade in particular also has witnessed the growing integration of financial markets around the world. Advancing technology has fostered the unbundling and transfer of risk and engendered a proliferation of new financial products.

Cross-border financial flows have accordingly accelerated at a pace in excess of global trade gains. This globalization of financial markets has meant that events in one market or in one country can affect within minutes developments in markets throughout the world.

More integrated and open financial markets have enabled all countries to reap the benefits of enhanced competition and im-

proved allocation of capital. Our businesses can raise funds almost anywhere in the world. Our savers can choose from a lengthening menu of investments as they seek the highest possible return on their funds, and our financial institutions enjoy wider opportunities to compete.

In such an environment a change in the expected rate of return on financial assets abroad naturally can affect the action of borrowers or lenders in the United States. In response, exchange rates, asset prices and rates of return all may adjust to new values. Strengthened linkages among world financial markets affect all markets and all investors. Just as U.S. markets are influenced by developments in markets abroad, foreign markets are influenced by events here.

These channels of influence do not depend on whether a country is experiencing a deficit or a surplus in its current account. In today's financial markets the net flows associated with current account surpluses and deficits are only the tip of the iceberg. What are more important are the huge stocks of financial claims, more than one and a half trillion held in the United States by foreigners and more than $26 trillion of dollar-denominated claims on U.S. borrowers held by U.S. residents.

This is in addition to the vast quantities of assets held in foreign currencies abroad. It is these holdings that can respond to changes in actual and expected rates of return.

In recent years we have seen several instances in which rates of return have changed essentially simultaneously around the world. For example, stock prices moved together in October 1987 and 1989, and in 1990 bond yields have risen markedly in many industrial countries.

However, we must be cautious in interpreting such events and in drawing implications for the United States. Frequently such movements occur in response to a common worldwide influence.

Currently, the world economy is adjusting to the implications of changes in Eastern Europe where there are tremendous new opportunities to invest and promote reconstruction and growth. Those opportunities, while contributing to the increase in interest rates in the United States, also open up new markets for our exports.

Moreover, despite globalization, financial markets do not necessarily move together. They also respond to more localized influences. Over 1989, for example, bond yields in West Germany and Japan rose about a percentage point while those in the United States fell by a similar amount. The contrast between 1989 and 1990 illustrates the complexity of relationships among financial markets. Interactions can show through in movements in exchange rates as well as interest rates, and changes in prices of assets depend on a variety of factors, including economic developments and inflation expectations in various countries as well as monetary and fiscal policies here and abroad.

The influence of economic policies abroad and other foreign developments on the U.S. economy is profound, and the Federal Reserve must carefully take them into account when considering its monetary policy. But these influences do not fundamentally constrain our ability to meet our most important monetary policy objectives.

Developments within U.S. financial markets remain the strongest influence on asset prices and interest rates determined by those markets and through them on the U.S. economy. Exchange rates absorb much of the impact of developments in foreign asset markets permitting U.S. interest rates to reflect primarily domestic economic conditions.

Exchange rates influence the prices of products that do or can, enter into international trade. Such factors can bring about changes in the composition of production between purely domestic goods and services and those entering international trade, and they can affect aggregate price movements for a time.

However, the overall pace of spending and output in the United States depends on the demands upon all sectors of the U.S. economy taken together, and our inflation rate over time depends on the strength of those demands relative to our ability to supply them out of domestic production.

Because the Federal Reserve is able to affect short-term interest rates in U.S. financial markets, it is able to influence the pace of economic activity in the short run and inflation pressures longer term. To be sure monetary policy must currently balance more factors than in previous decades, but our goals are still achievable.

Monetary policy is only one tool, however, and it cannot be used successfully to meet multiple objectives. The Federal Reserve, for example, can address itself to either domestic prices or exchange rates, but cannot be expected to achieve objectives for both simultaneously. Monetary policy alone is not readily capable of addressing today's large current account deficit which is symptomatic of underlying imbalances among saving, spending and production within the U.S. economy.

Continued progress in reducing the Federal deficit is a more appropriate instrument to raise domestic savings and free additional resources for productive investment. The long-term health of our economy requires the balanced use of monetary and fiscal policy in order to reach all of the Nation's policy objectives.

Thank you very much.

[The complete prepared statement of Chairman Greenspan and report follows:]

For release on delivery
10:00 A.M. EST
February 22, 1990

Testimony by

Alan Greenspan

Chairman

Board of Governors of the Federal Reserve System

before the

Committee on Banking, Housing, and Urban Affairs

of the

United States Senate

February 22, 1990

Mr. Chairman and Members of the Committee, I appreciate the opportunity to testify today on the Federal Reserve's semiannual Monetary Policy Report to the Congress. My prepared remarks discuss our monetary policy actions and plans in the context not only of the current and projected state of the economy, but also against the background of our longer-term objectives and strategy for achieving them. The testimony also addresses some issues for monetary policy raised by the increasingly international character of financial markets.

Economic and Monetary Policy Developments in 1989

Last year marked the seventh year of the longest peacetime expansion of the U.S. economy on record. Some 2-1/2 million jobs were created, and the civilian unemployment rate held steady at 5-1/4 percent. Inflation was held to a rate no faster than that in recent years, but unfortunately no progress was made in 1989 toward price stability. Thus, while we can look back with satisfaction at the economic progress made last year, there is still important work to be done.

About a year ago, Federal Reserve policy was in the final phase of a period of gradual tightening, designed to inhibit a buildup of inflation pressures. Interest rates moved higher through the winter, but started down when signs of more restrained aggregate demand and of reduced potential for higher inflation began to appear. As midyear approached, a marked strengthening of the dollar on foreign exchange markets further diminished the threat of accelerating inflation. New economic data suggested that the balance of risks had shifted toward the possibility of an undue weakening in economic activity. With M2 and M3

below the lower bounds of their annual ranges in the spring, the Federal Reserve in June embarked on a series of measured easing steps that continued through late last year. Across the maturity spectrum, interest rates declined further, to levels about 1-1/2 percentage points below March peaks. Reductions in inflation expectations and reports of a softer economy evidently contributed to the drop in rates in longer-term markets.

The decrease in short-term rates lifted M2 to around the middle of its annual range in the latter part of the year. Efforts under the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) to close insolvent thrift institutions and strengthen undercapitalized thrifts led to a cutback of the industry's assets and funding needs. This behavior held down M3 growth in the second half of the year, and that aggregate ended the year around the lower end of its annual range. The restructuring of the thrift industry did not, however, seem to appreciably affect the overall cost and availability of residential mortgage credit, as other suppliers of this credit stepped into the breach. In the aggregate, the debt of nonfinancial sectors slowed somewhat, along with spending, to a rate just below the midpoint of its annual range.

So far this year, the federal funds rate has remained around 8-1/4 percent, but rates on Treasury securities and longer-term private instruments have reversed some of their earlier declines. Investors have reacted to stronger-than-expected economic data, a runup in energy

prices, and increasingly attractive investment opportunities abroad, especially in Europe.

The Ultimate Objectives and Medium-Term Strategy of Monetary Policy

Monetary policy was conducted again last year with an eye on long-run policy goals, and economic developments in 1989 were consistent with the Federal Reserve's medium-term strategy for reaching them. The ultimate objective of economic policy is to foster the maximum sustainable rate of economic growth. This outcome depends on market mechanisms that provide incentives for economic progress by encouraging creativity, innovation, saving, and investment. Markets perform these tasks most effectively when individuals can reasonably believe that by forgoing consumption or leisure in the present they can reap adequate rewards in the future. Inflation insidiously undermines such confidence. It raises doubts in people's minds about the future real value of their nominal savings and earnings, and it distorts decision-making. Faced with inflation, investors are more likely to divert their attention to protecting the near-term purchasing power of their wealth. Modern-day examples of economies stunted by rapid inflation are instructive. In countries with high rates of inflation, people tend to put their savings in foreign currencies and commodities rather than in the financial investments and claims on productive assets that can best foster domestic growth. By ensuring stable prices, monetary policy can play its most important role in promoting economic progress.

The strategy of the Federal Open Market Committee (FOMC) for moving toward this goal remains the same--to restrain growth in money and

aggregate demand in coming years enough to establish a clear downward tilt to the trend of inflation and inflation expectations, while avoiding a recession. Approaching price stability may involve a period of expansion in activity at a rate below the growth in the economy's potential, thereby relieving pressures on resources. Once some slack develops, real output growth can pick up to around its potential growth rate, even as inflation continues to trend down. Later, as price stability is approached, real output growth can move still higher, until full resource utilization is restored.

While these are the general principles, no one can be certain what path for the economy would, in practice, accompany the gradual approach to price stability. One key element that would minimize the costs associated with the transition would be a conviction of participants in the economy that the anti-inflation policy is credible, that is, likely to be effective and unlikely to be reversed.

Stability of the general price level will yield important long-run benefits. Nominal interest rates will be reduced with the disappearance of expectations of inflation, and real interest rates likely will be lower as well, as less uncertainty about the future behavior of overall prices induces a greater willingness to save. Higher saving and capital accumulation will enhance productivity, and the trend growth in real GNP will be greater than would be possible if the recent inflation rate continued.

If past patterns of monetary behavior persist, maintaining price stability will require an average rate of M2 growth over time approximately equal to the trend growth in output. During the transition, the decline of market interest rates in response to the moderation in inflation would boost the public's demand for M2 relative to nominal spending, lowering M2 velocity. M2 growth over several years accordingly may show little deceleration, and it could actually speed up from time to time, as interest rates decline in fits and starts. Hence, the FOMC would not expect to lower its M2 range mechanically each and every year in the transition to price stability.

This qualitative description of our medium-term strategy is easy to state, but actually implementing it will be difficult. Unexpected developments no doubt will require flexible policy responses. Any such adjustments will not imply a retreat from the medium-term strategy or from ultimate policy goals. Rather, they will be mid-course corrections that attempt to keep the economy and prices on track. The easing of reserve pressures starting last June is a case in point. Successive FOMC decisions to ease operating policy were intended to forestall an economic downturn, the chances of which seemed to be increasing as the balance of risks shifted away from greater inflation. The FOMC was in no way abandoning its long-run goal of price stability. Instead, it sought financial conditions that would support the moderate economic expansion judged to be consistent with progress toward stable prices. In the event, output growth was sustained last year, although in the fourth quarter a major strike at Boeing combined with the first round of production cuts

in the auto industry accentuated the underlying slowdown. On the inflation side, price increases in the second half were appreciably lower than those in the first. (Although the CPI for January, as expected, showed a sizable jump in energy and food prices in the wake of December's cold snap, a reversal is apparently underway.)

Monetary Policy and the Economic Outlook for 1990

Against this background, the Federal Reserve Governors and the Presidents of Reserve Banks foresee continued moderate economic expansion over 1990, consistent with conditions that will foster progress toward price stability over time. At its meeting earlier this month, the FOMC selected ranges for growth in money and debt it believes will promote this outcome.

My testimony last July indicated the very preliminary nature of the tentative ranges chosen for 1990, given the uncertain outlook for the economy, financial conditions, and appropriate growth of money and debt. With the economic situation not materially different from what was anticipated at that time, the FOMC reaffirmed the tentative 3 to 7 percent growth range for M2 in 1990 that it set last July. This range, which is the same as that used in 1989, is expected by most FOMC members to produce somewhat slower growth in nominal GNP this year. The declines in short-term interest rates through late last year can be expected to continue to boost the public's demands for liquid balances in M2, at least for a while longer. M2 growth over 1990 thus may be faster than in recent years, and M2 velocity could well decline over the four quarters

of the year, absent a pronounced firming in short-term market interest rates.

In contrast with M2, the range for M3 has been reduced from its tentative range set last July. The new M3 range of 2-1/2 to 6-1/2 percent is intended to embody the same degree of restraint as the M2 range, but it was lowered to reflect the continued decline in thrift assets and funding needs now anticipated to accompany the ongoing restructuring of the thrift industry. This asset runoff began in earnest in the second half of last year, so its magnitude was not incorporated into the tentative M3 range for 1990 set last July. The bulk of the mortgage and real estate assets that thrifts will shed are expected to be acquired by the Resolution Trust Corporation and diversified investors other than depository institutions. Such assets thus will no longer be financed by monetary instruments included in M3. In addition, commercial banks are likely to be more cautious in their lending activities, reducing their need to issue wholesale managed liabilities included in M3. These influences should retard the growth of M3 relative to M2 again this year.

The debt of domestic nonfinancial sectors is expected to decelerate along with nominal GNP for a fourth straight year, and the Committee chose to lower the monitoring range for this aggregate to 5 to 9 percent for 1990. Merger and acquisition activity has retreated from the feverish pace of recent years, reflecting some well-publicized difficulties of restructured firms and more caution on the part of creditors. All other things equal, less restructuring activity and greater use of equity

finance imply reduced corporate borrowing. An ebbing of growth in household debt also seems probable.

Over the last decade, money and debt aggregates have become less reliable guides for the Federal Reserve in conducting policy. The velocities of the aggregates have ranged widely from one quarter or one year to the next, in response to interest rate movements and special factors. In the coming year, the effects of the contraction of the thrift industry on the velocity of M3, and to a lesser extent on that of M2, are especially difficult to predict. While recognizing that the growth rates of the broader monetary aggregates over long periods are still good indicators of trends in inflation, the FOMC will continue to take an array of factors into account in guiding operating policy. Information about emerging patterns of inflationary pressure, business activity, and conditions in domestic and international financial markets again will need to supplement monetary data in providing the background for decisions about the appropriate operating stance.

The Committee's best judgment is that money and debt growth within these annual ranges will be compatible with a moderation in the expansion of nominal GNP. Most FOMC members and other Reserve Bank presidents foresee real GNP growing 1-3/4 to 2 percent over the year as a whole. Such a rate would be around last year's moderate pace, excluding the rebound in agricultural output from the 1988 drought. A slight easing of pressures on resources probably is in store. Inflation pressures should remain contained, even though the decline in the dollar's value over the past half-year likely will reverse some of the beneficial

effects on domestic inflation stemming from the dollar's earlier appreciation. The CPI this year is projected to increase 4 to 4-1/2 percent, as compared with last year's 4-1/2 percent.

Risks to the Economic Outlook

Experience has shown such macroeconomic forecasts to be subject to a variety of risks. Assessing the balance of risks between production shortfalls and inflation pressures in the current outlook is complicated by several cross-currents in the domestic and international economic and financial situation.

One risk is that the weakness in economic activity evident around year-end may tend to cumulate, causing members' forecasts about production and employment this year to be overly optimistic. However, available indicators of near-term economic performance suggest that the weakest point may have passed. The inventory correction in the auto industry--a rapid one involving a sharp reduction in motor vehicle assemblies in January coupled with better motor vehicle sales--seems to be largely behind us. Industrial activity outside of motor vehicles appears to be holding up. Production of business equipment, where evidence has accumulated of some stability--if not an increase--in orders for capital goods, is likely to support manufacturing output in coming months. Housing starts were depressed in December by severely cold weather in much of the country. But starts bounced back strongly in January, in line with the large gain in construction employment last month. From these and similar data, one can infer the beginnings of a modest firming in economic activity. While we cannot be certain that we

are as yet out of the recessionary woods, such evidence warrants at least guarded optimism.

There are, however, other undercurrents that continue to signal caution. One that could disturb the sustainability of the current economic expansion has been the recent substantial deterioration in profit margins. A continuation of this trend could seriously undercut the still expanding capital goods market. However, if current signs of an upturn in economic activity broaden, profit margins can be expected to stabilize.

A more deep-seated concern with respect to the longer-run viability of the expansion is the increase in debt leverage. Although the trends of income and cash flow may have turned the corner, the structure of the economy's financial balance sheet weighs increasingly heavily on the dynamics of economic expansion. In recent years, business debt burdens have been enlarged through corporate restructurings, and as a consequence interest costs as a percent of cash flow has risen markedly. Responding to certain well-publicized debt-servicing problems, creditors have become more selective in committing funds for these purposes. Within the banking industry, credit standards have been tightened for merger and LBO loans, as well as for some other business customers. Credit for construction projects reportedly has become less available because of FIRREA-imposed limits and heightened concerns about overbuilding in a number of real estate markets.

Among households, too, debt-servicing burdens have risen to historic highs relative to income, and delinquency rates have moved up of

late. Suppliers of consumer and mortgage credit appear to have tightened lending terms a little. Real estate values have softened in some locales, although prices have maintained an uptrend in terms of the national averages, especially for single-family residences. These and other financial forces merit careful monitoring. While welcome from a supervisory perspective, more cautious lending does have the potential for damping aggregate demand.

It is difficult to assess how serious a threat increased leverage is to the current levels of economic activity. Clearly, should the economy fall into a recession, excess debt service costs would intensify the problems of adjustment. But it is unlikely that in current circumstances strains coming from the economy's financial balance sheet can themselves precipitate a downturn. As I indicated ~~earlier,~~ in my prepared text we expect nonfinancial debt growth to continue to slow from its frenetic pace of the mid-1980s. This should lessen the strain and hopefully the threat to the economy.

International Financial Markets and Monetary Policy

Among other concerns, recent events have highlighted the complex interactions between developments in the U.S. economy and financial markets and those in the other major industrial countries. Specifically, the parallel movements in long-term interest rates here and abroad over the early weeks of 1990 have raised questions: To what extent is the U.S. economy subject to influences from abroad? To what extent, as a consequence, have we lost control over our economic destiny? The simple answer to these questions is that the U.S. economy is influenced from

abroad to a substantially greater degree than, say, two or three decades ago, but U.S. monetary policy is, nonetheless, able to carry out its responsibilities effectively.

The post-war period has seen markedly closer ties among the world's economies. Markets for goods have become increasingly, and irreversibly, integrated as a result of the downsizing of economic output and the consequent expansion of international trade. The past decade, in particular, also has witnessed the growing integration of financial markets around the world. Advancing technology has fostered the unbundling and transfer of risk and engendered a proliferation of new financial products. Cross border financial flows have accordingly accelerated at a pace in excess of global trade gains. This globalization of financial markets has meant that events in one market or in one country can affect within minutes developments in markets throughout the world.

More integrated and open financial markets have enabled all countries to reap the benefits of enhanced competition and improved allocation of capital. Our businesses can raise funds almost anywhere in the world. Our savers can choose from a lengthening menu of investments as they seek the highest possible return on their funds. Our financial institutions enjoy wider opportunities to compete.

In such an environment, a change in the expected rate of return on financial assets abroad naturally can affect the actions of borrowers or lenders in the United States. In response, exchange rates, asset prices, and rates of return all may adjust to new values.

Strengthened linkages among world financial markets affect all markets and all investors. Just as U.S. markets are influenced by developments in markets abroad, foreign markets are influenced by events here. These channels of influence do not depend on whether a country is experiencing a deficit or a surplus in its current account. In today's financial markets, the net flows associated with current account surpluses and deficits are only the tip of the iceberg. What are more important are the huge stocks of financial claims--more than $1.5 trillion held in the United States by foreigners and more than $26 trillion of dollar-denominated claims on U.S. borrowers held by U.S. residents. This is in addition to the vast quantities of assets held in foreign currencies abroad. It is these holdings that can respond to changes in actual and expected rates of return.

In recent years we have seen several instances in which rates of return have changed essentially simultaneously around the world. For example, stock prices moved together in October 1987 and 1989, and in 1990 bond yields have risen markedly in many industrial countries.

However, we must be cautious in interpreting such events, and in drawing implications for the United States. Frequently, such movements occur in response to a common worldwide influence. Currently, the world economy is adjusting to the implications of changes in Eastern Europe, where there are tremendous new opportunities to invest and promote reconstruction and growth. Those opportunities, while contributing to the increase in interest rates in the United States, also open up new markets for our exports.

Moreover, despite globalization, financial markets do not necessarily move together--they also respond to more localized influences. Over 1989, for example, bond yields in West Germany and Japan rose about a percentage point, while those in the United States fell by a similar amount. The contrast between 1989 and 1990 illustrates the complexity of relationships among financial markets. Interactions can show through in movements in exchange rates as well as interest rates, and changes in the relative prices of assets depend on a variety of factors, including economic developments and inflation expectations in various countries as well as monetary and fiscal policies here and abroad.

The importance of foreign economic policies for domestic economic conditions has given rise in recent years to a formalized process of policy coordination among the major industrial countries. The purpose of such coordination is to help policymakers achieve better performance in their national economies. It begins with improved communication among authorities about economic developments within each country. It includes systematic analysis of the likely impact of these developments on the economies of the partner countries and on variables such as exchange rates that are inherently jointly determined in international markets. Within such a framework, it is possible to consider alternative choices for economic policies and to account explicitly for the impacts of likely policy measures in one country on the other economies.

The influence of economic policies abroad and other foreign developments on the U.S. economy is profound, and the Federal Reserve must carefully take them into account when considering its monetary

policy. But these influences do not fundamentally constrain our ability to meet our most important monetary policy objectives. Developments within U.S. financial markets remain the strongest influence on the asset prices and interest rates determined by those markets and, through them, on the U.S. economy. Exchange rates absorb much of the impact of developments in foreign asset markets, permitting U.S. interest rates to reflect primarily domestic economic conditions. Exchange rates influence the prices of products that do, or can, enter into international trade. Such factors can bring about changes in the composition of production between purely domestic goods and services and those entering international trade, and they can affect aggregate price movements for a time.

However, the overall pace of spending and output in the United States depends on the demands upon all sectors of the U.S. economy taken together. And our inflation rate, over time, depends on the strength of those demands relative to our ability to supply them out of domestic production. Because the Federal Reserve is able to affect short-term interest rates in U.S. financial markets, it is able to influence the pace of economic activity in the short-run and inflationary pressures longer-term. To be sure, monetary policy must currently balance more factors than in previous decades. But our goals are still achievable.

Monetary policy is only one tool, however, and it cannot be used successfully to meet multiple objectives. The Federal Reserve, for example, can address itself to either domestic prices or exchange rates but cannot be expected to achieve objectives for both simultaneously. Monetary policy alone is not readily capable of addressing today's large

current account deficit, which is symptomatic of underlying imbalances among saving, spending, and production within the U.S. economy. Continued progress in reducing the federal deficit is a more appropriate instrument to raise domestic saving and free additional resources for productive investment. The long-term health of our economy requires the balanced use of monetary and fiscal policy in order to reach all of the nation's policy objectives.

Considerations Regarding Immediate Release of FOMC Operating Decisions

Finally, Mr. Chairman, you requested that I address an issue that has been prominent in recent discussions of the procedures used to implement policy on a day-to-day basis. I refer to the way the Federal Reserve communicates its policy decisions to the public. The selection of money and debt ranges is aired promptly and thoroughly in the semiannual reports and testimonies. Changes in the discount rate are immediately announced in a press release.

Decisions made about open market operations at and between FOMC meetings are conveyed to the markets and to the public at large through those operations. In practice, there is little lag between a discrete change in operating policy and the wide recognition of that change, despite the absence of an immediate public announcement. Guidance for those operations is given to the Account Manager at the Federal Reserve Bank of New York as a Directive, which is made public shortly after the next FOMC meeting, six to seven weeks later.

Suggestions have been made that we release the Directive immediately after an FOMC meeting, or announce publicly any change in our

operating objectives as it occurs. These suggestions have appeal: surely more information is better than less in promoting efficient financial markets; and the need to infer the Federal Reserve's policy stance from its actions can give rise to mistakes and unnecessary market volatility.

Yet the amount of genuine new information that would be released is small; it is subject to misinterpretations; and its premature announcement could adversely affect the policy process.

For example, the Directive itself cannot capture all the considerations that guide Committee policy for the intermeeting period. It needs to be accompanied by the record of the Committee's deliberations, which takes several weeks to prepare properly. Moreover, early release could provoke overreactions in financial markets to contingencies or reserve pressure alternatives mentioned in a Directive that may not occur, or that may be superseded by intermeeting developments and adjustments. To the extent that market participants anticipate contingencies in the Directive that never materialize, the markets would be subjected to unnecessary volatility.

Earlier release of the Directive would, in addition, force the Committee itself to focus on the market impact of the announcement as well as on the ultimate economic impact of its actions. To avoid premature market reaction to mere contingencies, FOMC decisions could well lose their conditional character. Given the uncertainties in economic forecasts and in the links between monetary policy actions and

economic outcomes, such an impairment of flexibility in the evolution of policy would be undesirable.

Wide movements in bond and stock prices occur when investors receive new information that significantly alters their expectations over a relatively long-term horizon. Normally, changing perceptions about the current operating stance of monetary policy play only a minor role in episodes of financial variability. For example, over the last two months, U.S. bond and stock prices fell appreciably on balance, with fairly wide day-to-day and even intraday swings, but there was no uncertainty or change of view about the current stance of operating policy. To the extent that any of these market movements reflected policy, they must have been reactions to prospective changes in policy. But announcements of future changes in operating policy are not possible, since they are contingent upon future economic developments.

Changes in our current operating stance, of course, have the potential to alter anticipations of future conditions, including future policy. At times, monetary policymakers wish to strengthen the market's sense of a more basic change in the thrust of policy through an announcement effect, as well as through a change in the instrument itself. Changes in the discount rate provide good examples.

More often, however, the Federal Reserve judges that policy implementation is better served through small, incremental operating moves that do not connote a significant alteration in policy intent and do not have major implications for financial conditions in the more

distant future. Signaling such policy moves through open market operations usually avoids major and potentially destabilizing movements in bond and stock prices.

This way of distinguishing the nature of policy intent may well convey information to the financial markets about the future direction of policy better than would a formal, immediate announcement of every policy change.

Letter of Transmittal

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM
Washington, D.C., February 20, 1990

THE PRESIDENT OF THE SENATE
THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

The Board of Governors is pleased to submit its Monetary Policy Report to the Congress pursuant to the Full Employment and Balanced Growth Act of 1978.

Sincerely,
Alan Greenspan, Chairman

For use at 10:00 a.m., E.S.T.
Tuesday
February 20, 1990

Board of Governors of the Federal Reserve System

Monetary Policy Report to Congress Pursuant to the Full Employment and Balanced Growth Act of 1978

February 20, 1990

Table of Contents

		Page
Section 1:	Monetary Policy and the Economic Outlook for 1990	1
Section 2:	The Performance of the Economy in 1989	4
Section 3:	Monetary and Financial Developments During 1989	9

Ranges of Growth for Monetary and Credit Aggregates

	1988	1989	1990
Percent change, fourth quarter to fourth quarter			
M2	4 to 8	3 to 7	3 to 7
M3	4 to 8	3½ to 7½	2½ to 6½
Debt	7 to 11	6½ to 10½	5 to 9

elements in M3; thrift institution assets should continue to decline, as some solvent thrifts will be under pressure to meet capital standards and insolvent thrifts will continue to be shrunk and closed, with a portion of their assets carried, temporarily, by the government. While some of the assets shed by thrifts are expected to be acquired by commercial banks, overall growth in the asset portfolios of banks is expected to be moderate, as these institutions exercise caution in extending credit. An increase in lender – and borrower – caution more generally points to some slowing in the pace at which nonfinancial sectors take on debt relative to their income in 1990. In particular, recent developments suggest that leveraged buyouts and other transactions that substitute debt for equity in corporate capital structures will be noticeably less important in 1990 than in recent years. Moreover, a further decline in the federal sector's deficit is expected to reduce credit growth this year. In light of these considerations, the Committee reduced the monitoring range for debt of the nonfinancial sectors to 5 to 9 percent.

The setting of targets for money growth in 1990 is made more difficult by uncertainty about developments affecting thrift institutions. The behavior of M3 and, to a more limited extent, M2 is likely to be affected by such developments, but there is only limited basis in experience to gauge the likely impact. In addition, in interpreting the growth of nonfinancial debt, the Committee will have to take into account the amount of Treasury borrowing (recorded as part of the debt aggregate) used to carry the assets of failed thrift institutions, pending their disposal. With these questions adding to the usual uncertainties about the relationship among movements in the aggregates and output and prices, the Committee agreed that, in implementing policy, they would need to continue to consider, in addition to the behavior of money, indicators of inflationary pressures and economic growth, as well as developments in financial and foreign exchange markets.

Economic Projections for 1990

The Committee members, and other Reserve Bank presidents, expect that growth in the real economy will be moderate during 1990. Most project real GNP growth over the four quarters of the year to be between 1¾ and 2 percent – essentially the same increase as in 1989, excluding the bounceback in farm output after the 1988 drought. It is expected that this pace of expansion will be reflected in some easing of pressures on domestic resources; the central tendency of forecasts is for an unemployment rate of 5½ to 5¾ percent in the fourth quarter.

Certain factors have caused an uptick in inflation early this year. Most notably, prices for food and energy increased sharply as the year began, reflecting the impact of the unusually cold weather in December. However, these run-ups should be largely reversed in coming months, and inflation in food and energy prices for the year as a whole may not differ much from increases in other prices.

Given their importance in determining the trend of overall costs, a deceleration in the cost of labor inputs is an integral part of any solid progress toward price stability. Nominal wages and total compensation have grown relatively rapidly during the past two years, while increases in labor productivity have diminished. With prices being constrained by domestic and international competition, especially in goods markets, profit margins have been squeezed to low levels. A restoration of more normal margins ultimately will be necessary if businesses are to have the wherewithal and incentive to maintain and improve the stock of plant and equipment.

Unfortunately, the near-term prospects for a moderation in labor cost pressures are not favorable. Com-

Section 1: Monetary Policy and the Economic Outlook for 1990

The U.S. economy recorded its seventh consecutive year of expansion in 1989. Although growth was slower than in the preceding two years, it was sufficient to support the creation of 2½ million jobs and to hold the unemployment rate steady at 5¼ percent, the lowest reading since the early 1970s. On the external front, the trade and current account deficits shrank further in 1989. And while inflation remained undesirably high, the pace was less than many analysts – and, indeed, most members of the Federal Open Market Committee (FOMC) – had predicted, owing in part to the continuing diminution in longer-range inflation expectations.

In 1989, monetary policy was tailored to the changing contours of the economic expansion and the potential for inflation. Early in the year, as for most of 1988, the Federal Reserve tightened money market conditions in order to prevent pressures on wages and prices from building. Market rates of interest rose relative to those on deposit accounts, and unexpectedly large tax payments in April and May drained liquid balances, restraining the growth of the monetary aggregates in the first half of the year. By May, M2 and M3 lay below the lower bounds of the annual target ranges established by the FOMC.

Around midyear, risks of an acceleration in inflation were perceived to have diminished as pressures on industrial capacity had moderated, commodity prices had leveled out, and the dollar had strengthened on exchange markets, reinforcing the signals conveyed by the weakness in the monetary aggregates. In June, the FOMC began a series of steps, undertaken with care to avoid excessive inflationary stimulus, that trimmed 1½ percentage points from short-term interest rates by year-end. Longer-term interest rates moved down by a like amount, influenced by both the System's easing and a reduction in inflation expectations.

Growth of M2 rebounded to end the year at about the midpoint of the 1989 target range. Growth of M3, however, remained around the lower end of its range, as a contraction of the thrift industry, encouraged by the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA), reduced needs to tap M3 sources of funds. The primary effect of the shrinkage of the thrift industry's assets was a rechanneling of funds in mortgage markets, rather than a reduction in overall credit availability; growth of the nonfinancial sector debt aggregate monitored by the FOMC was just a bit slower in the second half than in the first, and this measure ended the year only a little below the midpoint of its range.

Thus far this year, the overnight rate on federal funds has held at 8¼ percent, but other market rates have risen. Increases of as much as ½ percentage point have been recorded at the longer end of the maturity spectrum. The bond markets responded to indicators suggesting a somewhat greater-than-anticipated buoyancy in economic activity – which may have both raised expected real returns on investment and renewed some apprehensions about the outlook for inflation. The rise in yields occurred in the context of a general runup in international capital market yields, which appears to have been in part a response to emerging opportunities associated with the opening of Eastern Europe; this development had particularly notable effects on the exchange value of the West German mark, which rose considerably relative to the dollar, the yen, and other non-EMS currencies.

Monetary Policy for 1990

The Federal Open Market Committee is committed to the achievement, over time, of price stability. The importance of this objective derives from the fact that the prospects for long-run growth in the economy are brightest when inflation need no longer be a material consideration in the decisions of households and firms. The members recognize that certain short-term factors – notably a sharp increase in food and energy prices – are likely to boost inflation early this year, but anticipate that these factors will not persist. Under these circumstances, policy can support further economic expansion without abandoning the goal of price stability.

To foster the achievement of those objectives, the Committee has selected a target range of 3 to 7 percent for M2 growth in 1990. Growth in M2 may be more rapid in 1990 than in recent years, and yet be consistent with some moderation in the rate of increase in nominal income and restraint on prices; in particular, M2 may grow more rapidly than nominal GNP in the first part of this year in lagged response to last year's interest rate movements. Eventually, however, slower M2 growth will be required to achieve and maintain price stability.

The Committee reduced the M3 range to 2½ to 6½ percent to take account of the effects of the restructuring of the thrift industry, which is expected to continue in 1990. A smaller proportion of mortgages is likely to be held at depository institutions and financed by

Economic Projections for 1990

	1989 Actual	FOMC Members and Other FRB Presidents		Administration
		Range	Central Tendency	
Percent change, fourth quarter to fourth quarter				
Nominal GNP	6.4	4 to 7	5½ to 6½	7.0
Real GNP	2.4	1 to 2¼	1¾ to 2	2.6
Consumer price index	4.5	3½ to 5	4 to 4½	4.1[1]
Average level in the fourth quarter, percent				
Unemployment rate	5.3	5½ to 6½	5½ to 5¾	5.4[2]

1. CPI-W. FOMC forecasts are for CPI-U.
2. Percent of total labor force, including armed forces residing in the United States.

pensation growth is being boosted in the first half of 1990 by an increase in social security taxes and a hike in the minimum wage. The anticipated easing of pressures in the labor market should help produce some moderation in the pace of wage increases in the second half of 1990, but the Committee will continue to monitor closely the growth of labor costs for signs of progress in this area.

Finally, the recent depreciation of the dollar likely will constitute another impetus to near-term price increases, reversing the restraining influence exerted by a strong dollar through most of last year. Prices of imported goods, excluding oil, increased in the fourth quarter after declining through the first three quarters of 1989. The full effect of this upturn likely will not be felt on the domestic price level until some additional time has passed.

Despite these adverse elements in the near-term picture, the Committee believes that progress toward price stability can be achieved over time, given the apparently moderate pace of activity. In terms of the consumer price index, most members expect an increase of between 4 and 4½ percent, compared with the 4.5 percent advance recorded in 1989.

Relative to the Committee, the Administration currently is forecasting more rapid growth in real and nominal GNP. At the same time, the Administration's projection for consumer price inflation is at the low end of the Committee's central tendency range. In its *Annual Report*, the Council of Economic Advisers argues that, if nominal GNP were to grow at a 7 percent annual rate this year—as the Council is projecting—then M2 could exceed its target range, particularly if interest rates fall as projected in the Administration forecast. As suggested above, monetary relationships cannot be predicted with absolute precision, but the Council's assessment is reasonable. And, although most Committee members believe that growth in nominal GNP more likely will be between 5½ and 6½ percent, a more rapid expansion in nominal income would be welcome if it promised to be accompanied by a declining path for inflation in 1990 and beyond.

Section 2: The Performance of the Economy in 1989

Real GNP grew 2½ percent over the four quarters of 1989, 2 percent after adjustment for the recovery in farm output from the drought losses of the prior year. This constituted a significant downshifting in the pace of expansion from the unsustainably rapid rates of 1987 and 1988, which had carried activity to the point that inflationary strains were beginning to become visible in the economy. As the year progressed, clear signs emerged that pressures on resource utilization were easing, particularly in the industrial sector. Nonetheless, the overall unemployment rate remained at 5.3 percent, the lowest reading since 1973, and inflation remained at 4½ percent despite the restraining influence of a dollar that was strong for most of the year.

The deceleration in business activity last year reflected, to some degree, the monetary tightening from early 1988 through early 1989 that was undertaken with a view toward damping the inflation forces. Partly as a consequence of that tightening, the U.S. dollar appreciated in the foreign exchange markets from early 1988 through mid-1989, contributing to a slackening of foreign demand for U.S. products. At the same time, domestic demand also slowed, more for goods than for services. Reflecting these developments, the slowdown in activity was concentrated in the manufacturing sector: Factory employment, which increased a total of 90,000 over the first three months of 1989, declined 195,000 over the remainder of the year, and growth in manufacturing production slowed from 5½ percent in 1988 to only 1¾ percent last year. Employment in manufacturing fell further in January of this year, but that decline was largely attributable to temporary layoffs in the automobile industry and most of the affected workers have since been recalled.

As noted above, the rate of inflation was about the same in 1989 as it had been in the preceding two years. While the appreciation of the U.S. dollar through the first half of the year helped to hold down the prices of imported goods, the high level of resource utilization continued to exert pressure on wages and prices. In that regard, the moderation in the expansion of real activity during 1989 was a necessary development in establishing an economic environment more conducive to progress over time toward price stability.

The Household Sector

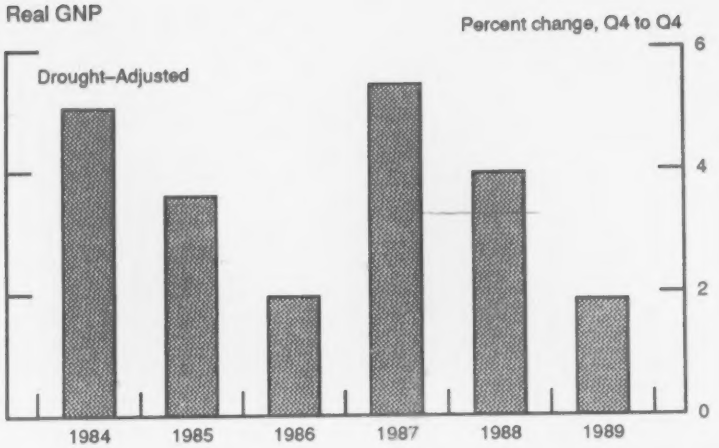
Household spending softened significantly in 1989, with a marked weakening in the demand for motor vehicles and housing. Real consumer spending on goods and services increased 2¼ percent over the four quarters of 1989, 1½ percentage points less than in 1988. Growth in real disposable income slowed last year, but continued to outstrip growth in spending, and, as a result, the personal saving rate increased to 5¾ percent in the fourth quarter of 1989.

The slackening in consumer demand was concentrated in spending on goods. Real spending on durable goods was about unchanged from the fourth quarter of 1988 to the fourth quarter of 1989—after jumping 8 percent in the prior year—chiefly reflecting a slump in purchases of motor vehicles. Spending on nondurable goods also decelerated, increasing only ½ percent in 1989 after a 2 percent advance in 1988. The principal support to consumer spending came from continued large gains in outlays for services. Spending on medical care moved up 7½ percent in real terms last year, and now constitutes 11 percent of total consumption expenditures—up from 8 percent in 1970. Outlays for other services rose 3¼ percent, with sizable increases in a number of categories.

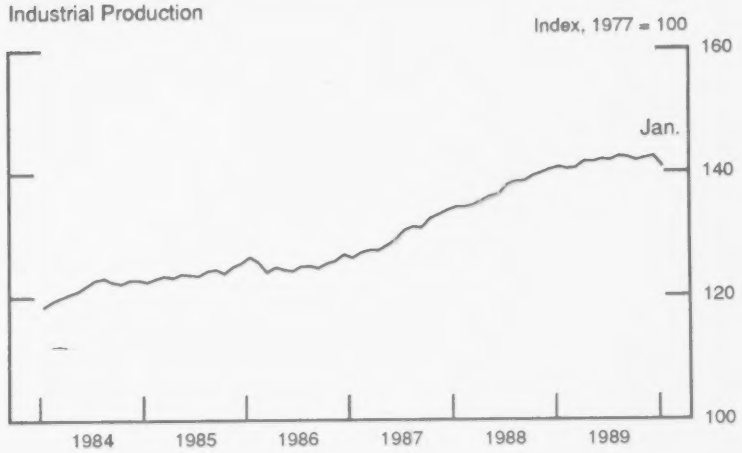
Sales of cars and light trucks fell ¾ million units in 1989, to 14½ million. Most of the decline reflected reduced sales of cars produced by U.S.-owned automakers; a decline in sales of imported automobiles was about offset by an increase in sales of foreign nameplates produced in U.S. plants. The slowing in motor vehicle sales was most pronounced during the fourth quarter of 1989, reflecting a "payback" for sales that had been advanced into the third quarter and a relatively large increase in sticker prices on 1990-model cars. Although part of this increase reflected the inclusion of additional equipment—notably the addition of passive restraint systems to many models—consumers nevertheless reacted adversely to the overall increase in prices. Beyond these influences, longer-run factors appear to have been damping demand for autos and light trucks during 1989; in particular, the robust pace of sales earlier in the expansion seems to have satisfied demand pent up during the recessionary period of the early 1980s. The rebuilding of the motor vehicle stock suggests that future sales are likely to depend more heavily on replacement needs.

Residential investment fell in real terms through the first three quarters of 1989, and with only a slight upturn in the fourth quarter, expenditures decreased 6 percent on net over the year. Construction was weighed down throughout 1989 by the overbuilding that occurred in some locales earlier in the decade. Vacancy rates were especially high for multifamily

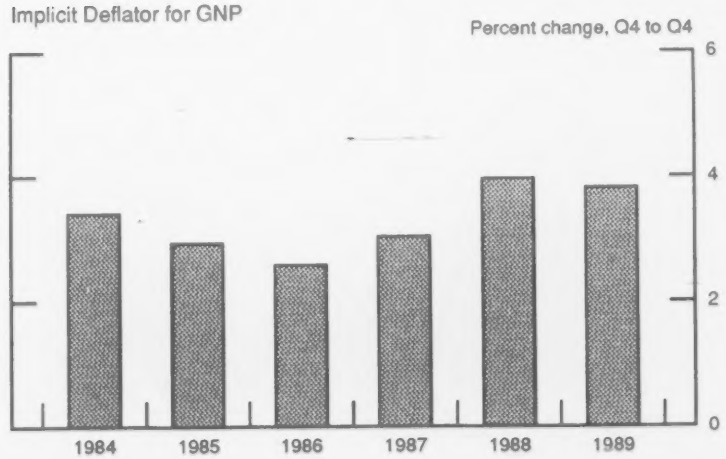
Real GNP



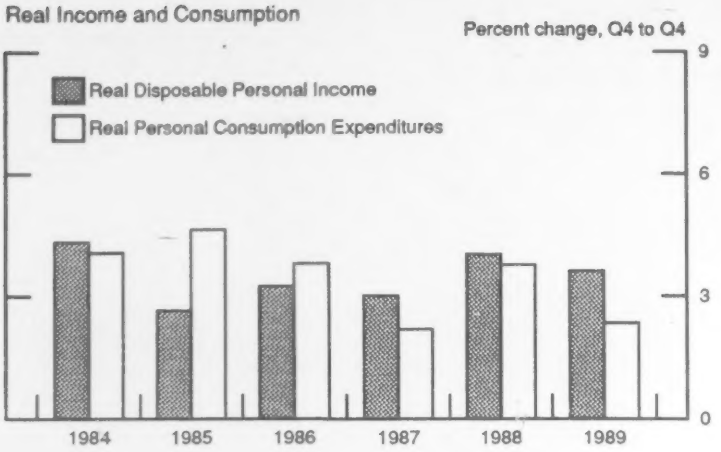
Industrial Production



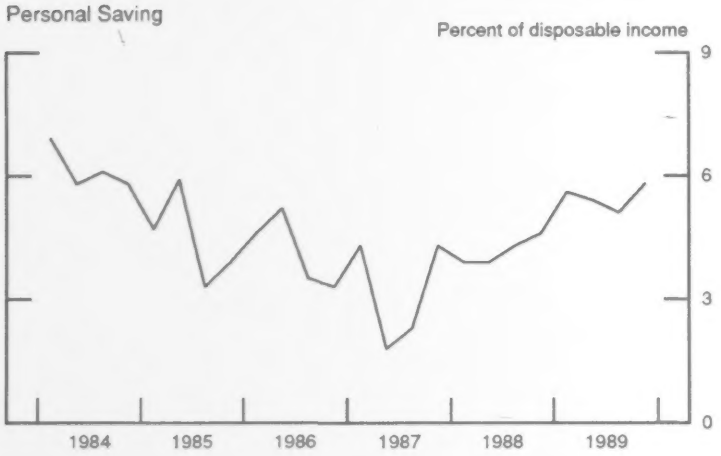
Implicit Deflator for GNP



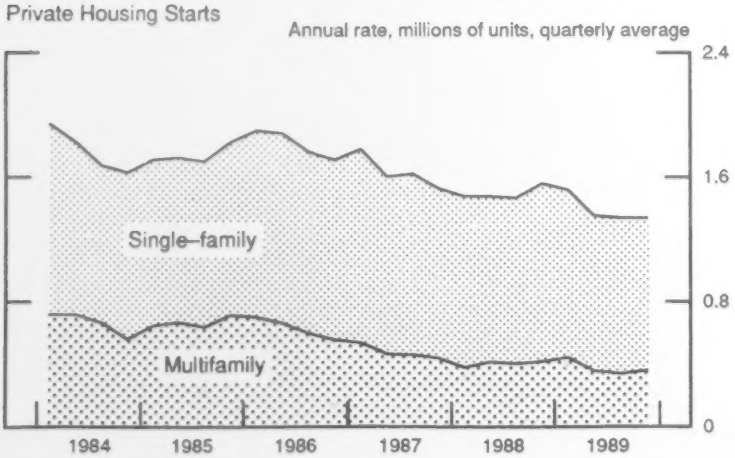
Real Income and Consumption



Personal Saving



Private Housing Starts



rental and condominium units. In the single-family sector, affordability problems constrained demand, dramatically so in those areas in which home prices had soared relative to household income.

Mortgage interest rates declined more than a percentage point, on net, between the spring of 1989 and the end of the year, helping to arrest the contraction in housing activity; however, the response to the easing in rates appears to have been muted somewhat by a reduction in the availability of construction credit, likely reflecting, in part, the tightening of regulatory standards in the thrift industry and the closing of a number of insolvent institutions. Exceptionally cold weather also hampered building late in the year, but a sharp December drop in housing starts was followed by a record jump in activity last month.

The Business Sector

Business fixed investment, adjusted for inflation, increased only 1 percent at an annual rate during the second half of 1989 after surging 7¾ percent during the first half. Although competitive pressures forced many firms to continue seeking efficiency gains through capital investment, the deceleration in overall economic growth made the need for capacity expansion less urgent, and shrinking profits reduced the availability of internal finance.

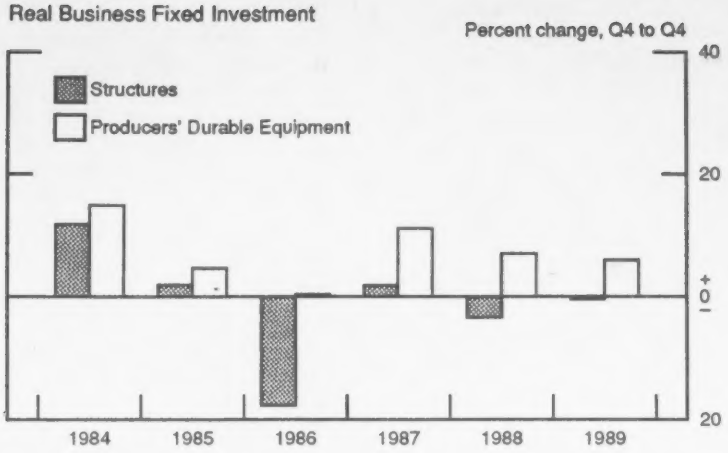
Spending on equipment moved up briskly during the first half of 1989, with particularly notable gains in outlays for information processing equipment—computers, photocopiers, telecommunications devices, and the like. However, equipment outlays were flat in the second half of the year; growth in the information processing category slowed sharply, and spending in most other categories was either flat or down. Purchases of motor vehicles dropped sharply in the fourth quarter from the elevated levels of the second and third quarters. There were a few exceptions to the general pattern of weakness during the second half. Spending on aircraft was greater in the second half of 1989 than in the first half, and would have increased still more had it not been for the strike at Boeing. Outlays for tractors and agricultural machinery moved up smartly; spending on farm equipment has been buoyed by the substantial improvements over the past several years in the financial health of the agricultural sector. Over the four quarters of 1989, total spending on equipment increased 6 percent in real terms—about 1 percentage point below the robust pace of 1988.

Business spending for new construction edged down ½ percent in real terms during 1989—the second consecutive yearly decline. Commercial construction, which includes office buildings, was especially weak; vacancy rates for office space remain at high levels in many areas, lowering prospective returns on new investment. Outlays for drilling and mining, which had dropped 20 percent over the four quarters of 1988, moved down further in the first quarter of 1989; later in the year, drilling activity revived as crude oil prices firmed. The industrial sector was the most notable exception to the overall pattern of weakness: Real outlays increased 11 percent in 1989, largely owing to construction that had been planned in 1987 and 1988 when capacity in many basic industries tightened substantially and profitability was improving sharply.

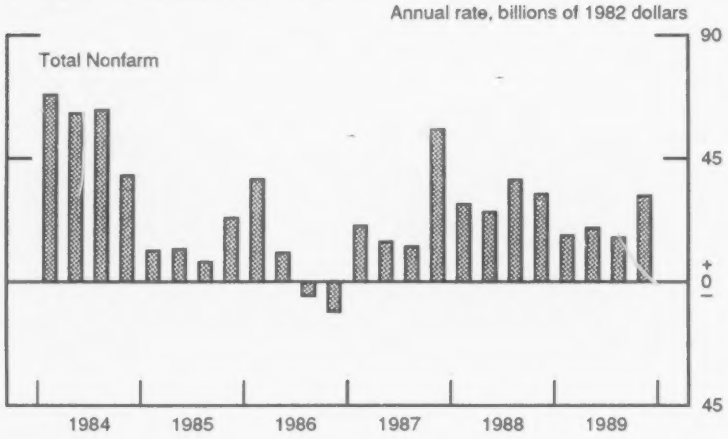
As noted above, the slowdown in investment spending during the second half of last year likely was exacerbated by the deterioration in corporate cash flow. Before-tax operating profits of nonfinancial corporations dropped 12 percent from the fourth quarter of 1988 to the third quarter of 1989 (latest data available); after-tax profits were off in about the same proportion. Reflecting the increased pressures from labor and materials costs—and a highly competitive domestic and international environment—pre-tax domestic profits of nonfinancial corporations as a share of gross domestic product declined to an average level of 8 percent during the first three quarters of 1989, the lowest reading since 1982. At the same time, taxes as a share of pre-tax operating profits increased to an estimated 44 percent in the first three quarters of 1989; since 1985, this figure has retraced a bit more than half of its decline from 54 percent in 1980.

Nonfarm business inventory investment averaged $21 billion in 1989. Although the average pace of accumulation last year was slower than in 1988, the pattern across sectors was somewhat uneven. Some of the buildup in stocks took place in industries—such as aircraft—where orders and shipments have been strong for some time now. But inventories in some other sectors became uncomfortably heavy at times and precipitated adjustments in orders and production. The clearest area of inventory imbalance at the end of the year was at auto dealers, where stocks of domestically produced automobiles were at 1.7 million units in December—almost three months' supply at the sluggish fourth-quarter sales pace. In response, the domestic automakers implemented a new round of sales incentives and cut sharply the planned assembly rate for the first quarter of 1990. Elsewhere in the retail sector, inventories moved up substantially relative to sales at general merchandise outlets. Overall, however, most sectors of the economy have adjusted fairly promptly to the deceleration in sales, and

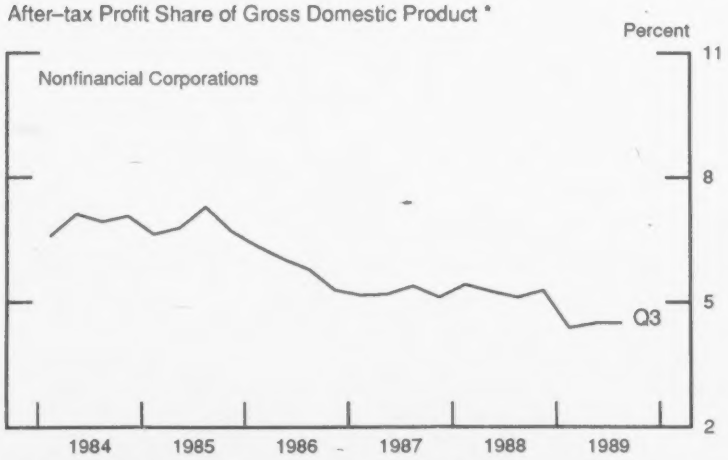
Real Business Fixed Investment



Changes in Real Business Inventories



After–tax Profit Share of Gross Domestic Product *



* Ratio of profits from domestic operations with inventory valuation and capital consumption adjustments to gross domestic product of nonfinancial corporate sector.

appear to have succeeded in preventing serious overhangs from developing.

The Government Sector

Budgetary pressures continued to restrain the growth of purchases at all levels of government. At the federal level, purchases fell 3 percent in real terms over the four quarters of 1989, lower defense purchases accounting for the bulk of the decline. Nondefense purchases also declined in real terms from the fourth quarter of 1988 to the fourth quarter of 1989; increases in such areas as the space program and drug interdiction were more than offset by general budgetary restraint that imposed real declines on most other discretionary programs.

In terms of the unified budget, the federal deficit in fiscal year 1989 was $152 billion, slightly smaller than in 1988. Growth in total federal outlays, which includes transfer payments and interest costs as well as purchases of goods and services, picked up a bit in fiscal year 1989. Outlays were boosted at the end of the fiscal year by the initial $9 billion of spending by the Resolution Trust Corporation. On the revenue side of the ledger, growth in federal receipts also increased in fiscal 1989. The acceleration occurred in the individual income tax category, but strong increases also were recorded in corporate and social security tax payments.

Purchases of goods and services at the state and local level increased 2½ percent in real terms over the four quarters of 1989, down more than a percentage point from the average pace of the preceding five years. Nonetheless, there were some areas of growth. Spending for educational buildings increased, and employment in the state and local sector rose 350,000 over the year, largely driven by a pickup in hiring by schools. Despite the overall slowdown in the growth of purchases, the budgetary position of the state and local sector deteriorated further over the year; the annualized deficit of operating and capital accounts, which excludes social insurance funds, increased $6 billion over the first three quarters of 1989 and appears to have worsened further in the fourth quarter.

The External Sector

The U.S. external deficits improved somewhat in 1989, but not by as much as in 1988. On a balance-of-payments basis, the deficit on merchandise trade fell from an annual rate of $128 billion in the fourth quarter of 1988 (and $127 billion for the year as a whole) to $114 billion in the first quarter of 1989. Thereafter, there was no further net improvement. The appreciation in the foreign exchange value of the dollar between early 1988 and mid-1989 appears to have played an important role in inhibiting further progress on the trade front. During the first three quarters of 1989, the current account, excluding the influence of capital gains and losses that are largely caused by currency fluctuations, showed a deficit of $106 billion at an annual rate—somewhat below the $124 billion deficit in the comparable period of 1988.

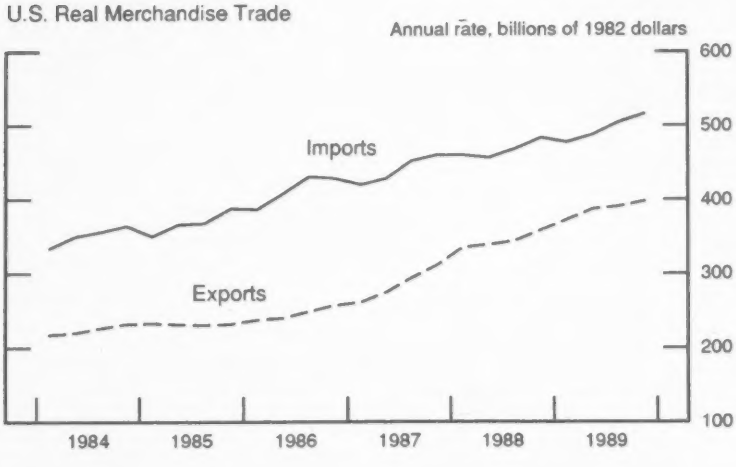
Measured in terms of the other Group of Ten currencies, the foreign exchange value of the U.S. dollar in December 1989 was about 3 percent above its level in December 1988, but the dollar has moved lower thus far in 1990. In real terms, the net appreciation of the dollar during 1989 in terms of the other G-10 currencies was about 5 percent, as consumer prices rose somewhat faster here than abroad, on average. Over the year, the dollar moved lower on balance against the currencies of South Korea, Singapore, and especially Taiwan. From a longer perspective, the modest uptrend on balance in the dollar over the past two years marked a sharp departure from the substantial weakening seen during the 1985-1987 period.

The behavior of the dollar differed greatly between the two halves of 1989. In the first half, the dollar appreciated 12 percent in terms of the other G-10 currencies, while depreciating against the currencies of South Korea and Taiwan. The dollar fluctuated during the summer, and later in the year unwound most of the prior appreciation, as U.S. interest rates eased relative to rates abroad and in response to concerted intervention in exchange markets in the weeks immediately after the September meeting of Group of Seven officials and to events in Eastern Europe. In the second half of the year, the dollar rose against the currencies of South Korea and Taiwan while depreciating in terms of the Singapore dollar. Over the course of 1989, the dollar appreciated nearly 16 percent against the Japanese yen and 14 percent against the British pound, but it depreciated slightly against the German mark, the Canadian dollar, and most other major currencies.

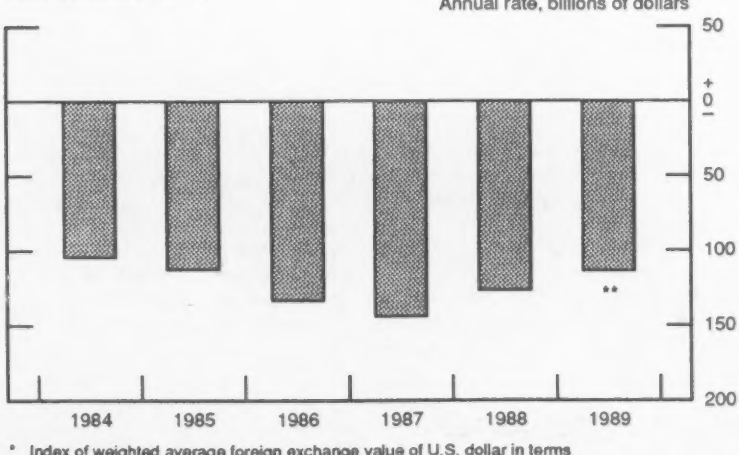
On a GNP basis, merchandise exports increased about 11 percent in real terms over the four quarters of 1989—roughly 4 percentage points less than in 1988. This deceleration took place despite continued strong growth in economic activity in most foreign industrial countries (with the exception of Canada and the United Kingdom), and appears to have reflected, in large part, the effect on U.S. competitiveness of the dollar's appreciation and more rapid U.S. inflation over 1988 and much of 1989. Exports were also depressed in the fourth quarter of 1989 by a number of special factors including the Boeing strike. The volume of agricultural exports increased about 11 percent in 1989—a bit faster

Foreign Exchange Value of the U.S. Dollar *

U.S. Real Merchandise Trade



U.S. Current Account



* Index of weighted average foreign exchange value of U.S. dollar in terms of currencies of the other G–10 countries. Weights are 1972–76 global trade of each of the 10 countries.

** Average of first three quarters of 1989, at an annual rate.

even than the robust pace of 1988. The value of agricultural exports rose much less, however, as agricultural export prices reversed the drought-induced increases of the previous year.

Merchandise imports excluding oil expanded about 7 percent in real terms during 1989, with much of the rise accounted for by imports of computers. Imports of oil increased 6 percent from the fourth quarter of 1988 to the fourth quarter of 1989, to a rate of 8.3 million barrels per day. At the same time, the average price per barrel increased almost 40 percent, and the nation's bill for foreign oil jumped 45 percent.

The counterpart of the current account deficit of $106 billion at an annual rate over the first three quarters of 1989 was a recorded net capital inflow of about $60 billion at an annual rate and an unusually large statistical discrepancy, especially in the second quarter. More than half of the recorded net inflow of capital reflected transactions in securities, as foreign private holdings of U.S. securities rose nearly $50 billion (half of the increase being in holdings of U.S. Treasury securities), while U.S. holdings of foreign securities increased a bit less than $20 billion. Net direct investment accounted for another substantial portion of the inflow; foreign direct investment holdings in the U.S. rose more than $40 billion, and U.S. holdings abroad rose only half as much. Over the first three quarters of 1989, foreign official assets in the United States increased almost $15 billion, but this increase was more than offset by the increase in U.S. official holdings of assets abroad, largely associated with U.S. intervention operations to resist the dollar's strength.

Labor Markets

Employment growth slowed in the second half of 1989; nonetheless, nonfarm payrolls increased nearly 2½ million during the year. The bulk of this expansion occurred in the service-producing sector. By contrast, the manufacturing sector shed 100,000 jobs. These job losses were more than accounted for by declines in the durable goods industries, and appeared to reflect the slump in auto sales, the weakening in capital spending, and the effects of a stronger dollar on exports and imports.

Despite the slowdown in new job creation, the overall balance of supply and demand in the labor market remained steady over the year. The civilian unemployment rate, which had declined about ½ percentage point over the twelve months of 1988, finished 1989 at 5.3 percent—unchanged from twelve months earlier. Moreover, there was no increase in the number of "discouraged" workers—those who say they would re-enter the labor force if they thought they could find a job. Nor was there any net increase in workers who accepted part-time employment when they would have preferred full-time. The proportion of the civilian population with jobs reached an historic high.

Reflecting the tightness of labor markets and the persistence of inflation expectations in the 4 to 5 percent range, according to surveys, the employment cost index for wages and salaries in nonfarm private industry increased 4¼ percent over the 12 months of 1989—about the same as in 1988. Benefit costs continued to rise more rapidly than wages and salaries last year, with health insurance costs remaining a major factor; nonetheless, the rate of growth in overall benefit costs slowed in 1989, in part because of a smaller increase in social security taxes than in 1988. Total compensation—including both wages and salaries and benefits—rose 4¾ percent during 1989. Compensation growth in the service-producing sector—at 5 percent—continued to outpace the gain in the goods-producing sector by about ¼ percentage point.

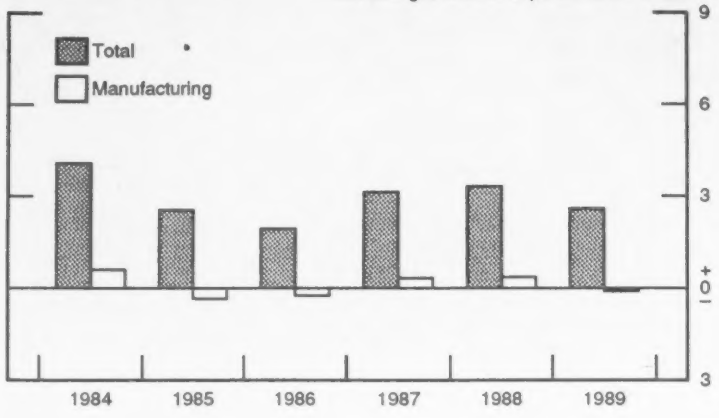
A slowdown in the growth of productivity often accompanies a softening in the general economy, and productivity gains were lackluster in 1989. Output per hour in the private nonfarm business sector increased only ½ percent over the four quarters of the year—1 percentage point below the rate of increase in 1988. In the manufacturing sector, productivity gains during the first half of 1989 kept pace with the 1988 average of 3 percent; in the second half, however, productivity growth slowed to an annual rate of 2¼ percent. Reflecting both the persistent growth in hourly compensation and the disappointing developments in productivity, unit labor costs in private nonfarm industry rose 5 percent over the four quarters of 1989—the largest increase since 1982.

Price Developments

Inflation in consumer prices remained in the neighborhood of 4½ percent for the third year in a row, as the level of economic activity was strong and continued to exert pressures on available resources. During the first half of the year, overall inflation was boosted by a sharp runup in energy prices and a carry-over from 1988 of drought-related increases in food prices. However, inflation in food prices slowed during the second half, and energy prices retraced about a third of the earlier run-up. Prices for imported goods excluding oil were little changed over 1989, on net, and acted as a moderating influence on consumer price inflation.

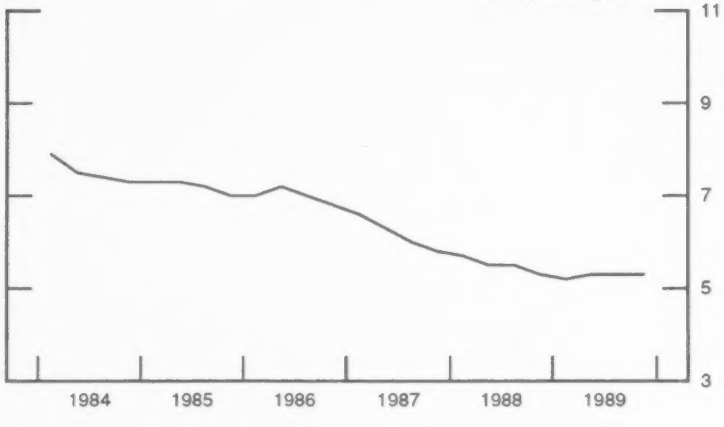
Nonfarm Payroll Employment

Net change, millions of persons, Q4 to Q4



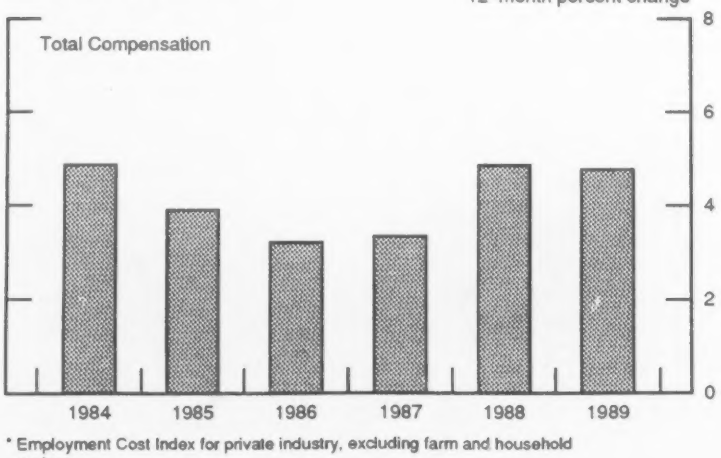
Civilian Unemployment Rate

Quarterly average, percent



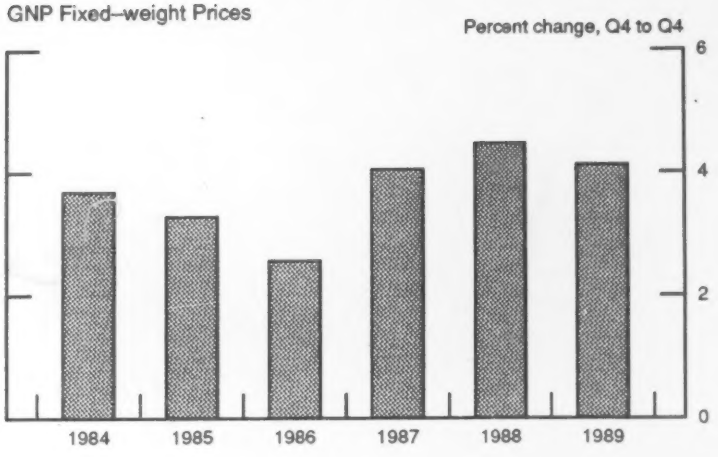
Employment Cost Index *

12–month percent change

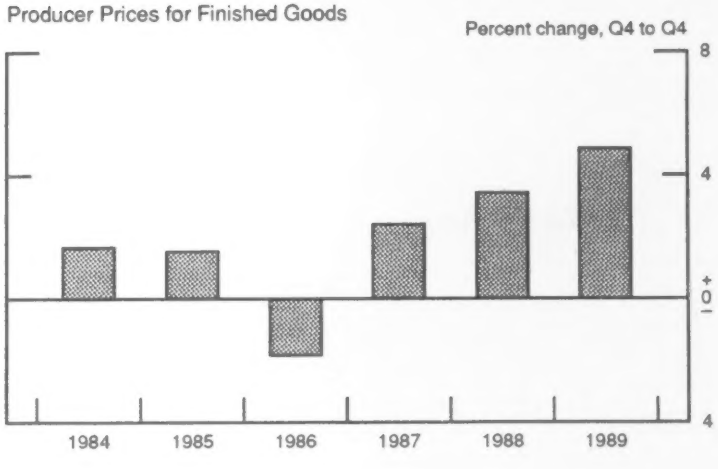


* Employment Cost Index for private industry, excluding farm and household workers.

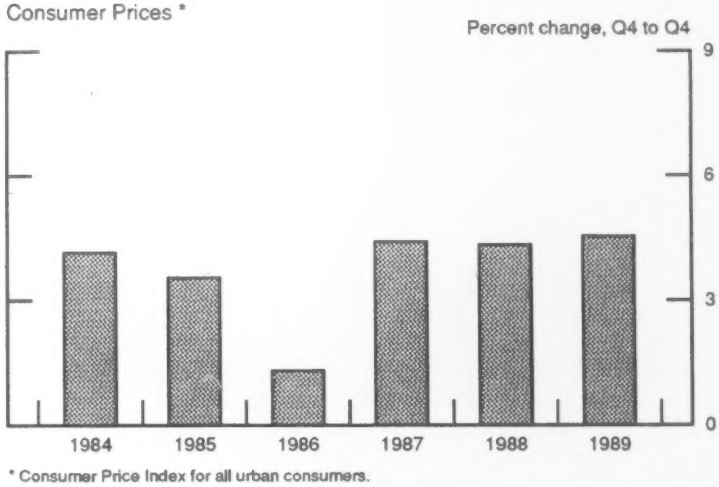
GNP Fixed–weight Prices



Producer Prices for Finished Goods



Consumer Prices *



* Consumer Price Index for all urban consumers.

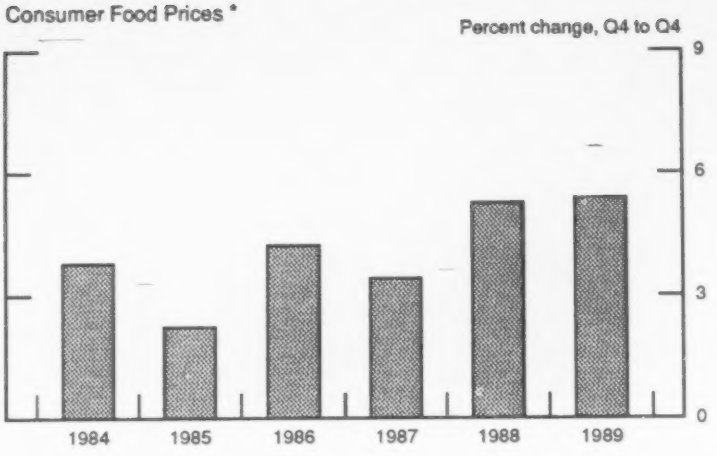
Food prices increased 5½ percent at the retail level, slightly more than in 1988 when a number of crops were severely damaged by drought. Continued supply problems in some agricultural markets in 1989—notably a poor wheat crop and a shortfall in dairy production—likely prevented a deceleration from the drought-induced rate of increase in 1988. At the same time, increases in demand, including sharp increases in exports of some commodities, also appear to have played a role. Still another impetus to inflation in the food area last year evidently came from the continuing rise in processing and marketing costs.

Consumer energy prices surged 17 percent at an annual rate during the first six months of 1989, before dropping back 6 percent in the second half. During the first half of the year, retail energy prices were driven up by increases in the cost of crude oil. The increase in gasoline prices at mid-year was exaggerated by the introduction of tighter standards governing the composition of gasoline during summer months. Gasoline prices eased considerably in the second half, reflecting a dip in crude oil prices and the expiration of the summer-time standards. Taking the twelve months of 1989 as a whole, the increase in retail energy prices came to a bit more than 5 percent. Heating oil prices jumped sharply at the turn of the year, reflecting a surge in demand caused by December's unusually cold weather. The spike in heating fuel prices largely reversed itself in spot markets during January of this year, but crude oil prices remained at high levels.

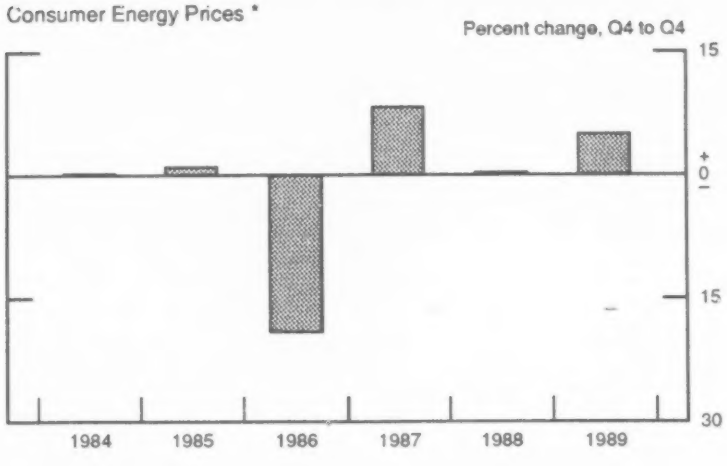
Consumer price increases for items other than food and energy remained at about 4½ percent in 1989. Developments in this category likely would have been less favorable had the dollar not been appreciating in foreign exchange markets through the first half of 1989. The prices of consumer commodities excluding food and energy decelerated sharply, and this slowdown was particularly marked for some categories where import penetration is high, including apparel and recreational equipment. Given the dollar's more recent depreciation, however, the moderating effect of import prices on overall inflation may be diminishing. Indeed, prices for imported goods excluding oil turned up in the fourth quarter of 1989, after declining earlier in the year. In contrast to goods prices, the prices of nonenergy services—which make up half of the overall consumer price index—increased 5¼ percent in 1989, ¼ percentage point more than in 1988. The pickup in this category was led by rents, medical services, and entertainment services.

At the producer level, prices of finished goods increased 7½ percent at an annual rate during the first half—almost twice the pace of 1988— before slowing to a 2½ percent annual rate of increase over the second half. In large part, developments in this sector reflected the same sharp swings in energy prices that affected consumer prices. At earlier stages of processing, the index for intermediate materials excluding food and energy decelerated sharply during the first half of the year, and then edged down in the second half. For the year as a whole, this index registered a net increase of only 1 percent, compared with more than 7 percent in 1988. The sharp deceleration in this category appears to have reflected a relaxation of earlier pressures on capacity in the primary processing industries, and the influence of the rising dollar through the first half of last year. Also consistent with the weakening in the manufacturing sector and the strength of the dollar, the index for crude nonfood materials excluding energy declined 3¾ percent over the year, and spot prices for industrial metals moved sharply lower during the year, owing in part to large declines for steel scrap, copper, and aluminum.

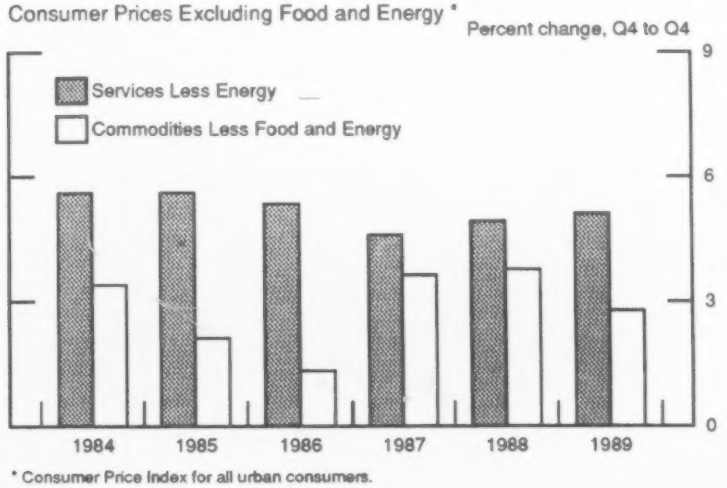
Consumer Food Prices *



Consumer Energy Prices *



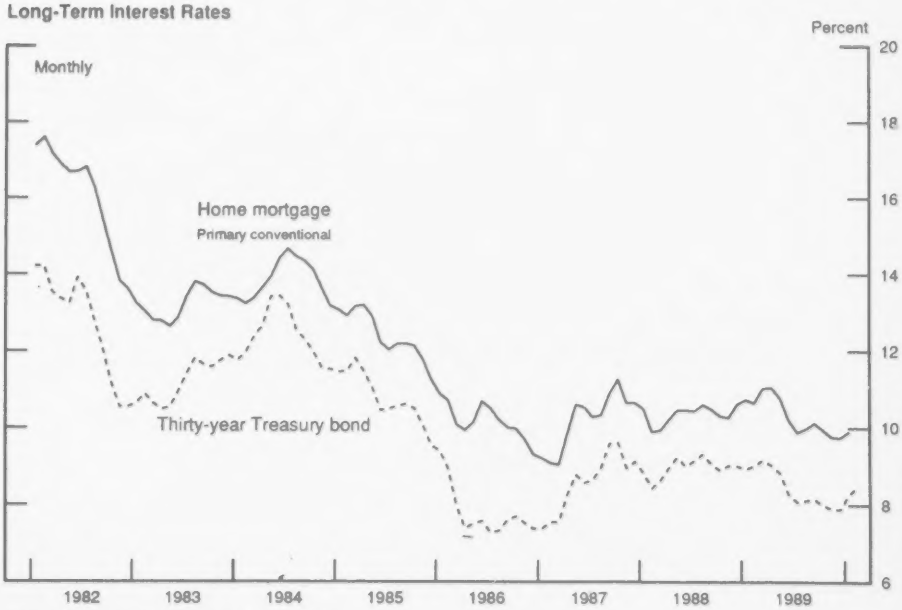
Consumer Prices Excluding Food and Energy *



* Consumer Price Index for all urban consumers.

Short-Term Interest Rates

Long-Term Interest Rates



Observations are monthly averages of daily data;
last observation for January 1990.

Section 3: Monetary and Financial Developments During 1989

In 1989, the Federal Reserve continued to pursue a policy aimed at containing and ultimately eliminating inflation while providing support for continued economic expansion. In implementing that policy, the Federal Open Market Committee maintained a flexible approach to monetary targeting, with policy responding to emerging conditions in the economy and financial markets, as well as to the growth of the monetary aggregates relative to their established target ranges. This flexibility has been necessitated by the substantial variability in the short-run relationship between the monetary aggregates and economic performance; however, when viewed over a longer perspective, those aggregates are still useful in conveying information about price developments.

As the year began, monetary policy was following through on a set of measured steps begun a year earlier to check inflationary pressures. By then, however, evidence of a slackening in aggregate demand, along with sluggish growth of the monetary aggregates, suggested that the year-long rise in short-term interest rates was noticeably restraining the potential for more inflation. But, after a ½ percentage point increase in the discount rate at the end of February, the Federal Reserve took no further policy action until June. Over the balance of 1989, the Federal Reserve moved toward an easing of money market conditions, as indications mounted of slack in demand and lessened inflation pressures. The easing in reserve availability induced declines in short-term interest rates of 1½ percentage points; money growth strengthened appreciably, and M2 was near the middle of its target range by the end of 1989. The level of M3, on the other hand, remained around the lower bound of its range, with its weakness mostly reflecting the shifting pattern of financial intermediation as the thrift industry retrenched. The growth of nonfinancial debt was trimmed to 8 percent in 1989, about in line with the slowing in the growth of nominal GNP, and ended the year at the midpoint of its monitoring range.

Implementation of Monetary Policy

In the opening months of the year, the Federal Open Market Committee extended the move toward restraint that had begun almost a year earlier, seeking to counter a disquieting intensification of inflationary pressures. Policy actions in January and February, restraining reserve availability and raising the discount rate, prompted a further ¾ percentage point increase in short-term market interest rates. Longer-term rates, however, moved up only moderately; the tightening apparently had been widely anticipated and was viewed as helping to avoid an escalation in underlying inflation. Real short-term interest rates—nominal rates adjusted for expected price inflation—likely moved higher, though remaining below peak levels earlier in the expansion; these gains contributed to a strengthening of the foreign exchange value of the dollar over this period, while the growth of the monetary aggregates slowed as the additional policy restraint reinforced the effects of actions in 1988.

As evidence on prospective trends in inflation and spending became more mixed in the second quarter, the Committee refrained from further tightening and in June began to ease pressures on reserve markets. As the information on the real economy, along with the continued rise in the dollar, suggested that the outlook for inflation was improving, most long-term nominal interest rates fell as much as a percentage point from their March peaks; the yield on the bellwether thirty-year Treasury bond moved down to about 8 percent by the end of June. The decline in interest rates outstripped the reduction in most measures of investors' inflation expectations, so that estimated real interest rates fell from their levels of earlier in the year. These declines in nominal and real interest rates, however, were not accompanied by declines in the foreign exchange value of the dollar. Rather, because of better-than-expected trade reports and political turmoil abroad, the dollar strengthened further.

In July, when the FOMC met for its semiannual review of the growth ranges for money and credit, M2 and M3 lay at or a bit below the lower bounds of their target cones. This weakness, reinforcing the signals from prices and activity, contributed to the Committee's decision to take additional easing action in reserve markets. The Committee reaffirmed the existing annual target ranges for the monetary and debt aggregates and tentatively retained those ranges for the next year, since they were likely to encompass money growth that would foster further economic expansion and moderation of price pressures in 1990.

Late in the summer, longer-term interest rates turned higher, as several economic data releases suggested reinvigorated inflationary pressures. With growth in the monetary aggregates rebounding, the Committee kept reserve conditions about unchanged until the direction of the economy and prices clarified.

Beginning in October, amid indications of added risks of a weakening in the economic expansion, the

FOMC reduced pressures on reserve markets in three separate steps, which nudged the federal funds rate down to around 8¼ percent by year-end, about 1½ percentage points below its level when incremental tightening ceased in February. Over those ten months, other short- and long-term nominal interest rates fell about 1 to 1¼ percentage points; and most major stock price indexes reached record highs at the turn of the year, more than recovering the losses that occurred on October 13. Reflecting some reduction in inflation anticipations over the same period, estimated short- and long-term real interest rates fell somewhat less than nominal rates, dropping probably about ½ to ¾ percentage point. Still, most measures of short- and long-term real interest rates remained well above their trough levels of 1986 and 1987—levels that had preceded rapid growth in the economy and a buildup of inflationary pressures.

Over the last three months of the year and into January 1990, the foreign exchange value of the dollar declined substantially from its high, which was reached around midyear and largely sustained through September. The dollar fell amid concerted intervention undertaken by the G-7 countries in the weeks immediately after a meeting of the finance ministers and central bank governors of these countries in September. The dollar continued to decline in response to the easing of short-term interest rates on dollar assets and increases in rates in Japan and Germany. The German currency rate rose particularly sharply as developments in Eastern Europe were viewed as favorable for the West German economy, attracting global capital flows. Rising interest rates in Germany likely contributed to an increase in bond yields in the United States early in 1990, even as U.S. short-term rates remained essentially unchanged. More important, however, for the rise in nominal, and likely real, long-term rates in the United States were incoming data pointing away from recession in the economy and from any abatement in price pressures, especially as oil prices moved sharply higher.

Behavior of Money and Credit

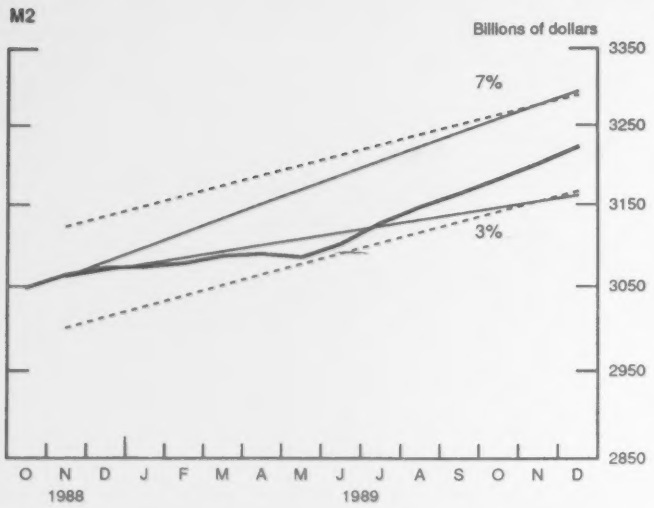
Growth in M2 was uneven over 1989, with marked weakness in the first part of the year giving way to robust growth thereafter. On balance over the year, M2 expanded 4½ percent, down from 5¼ percent growth in 1988, placing it about at the midpoint of its 1989 target range of 3 to 7 percent. The slower rate of increase in M2 reflected some moderation in nominal income growth as well as the pattern of interest rates and associated opportunity costs of holding money, with the effects of increases in 1988 and 1989 outweighing the later, smaller, drop in rates.

M2 has grown relatively slowly over the past three years, as the Federal Reserve has sought to ensure progress over time toward price stability. There appears to be a fairly reliable long-term link between M2 and future changes in inflation. One method of specifying that link is to estimate the equilibrium level of prices implied by the current level of M2, assuming that real GNP is at its potential and velocity is at its long-run average, and compare that to actual prices. The historical record suggests that inflation tends to rise when actual prices are below the equilibrium level and to moderate when equilibrium prices are below actual. At the end of 1986, the equilibrium level of prices was well above the actual level, reinforcing the view that the risks weighed on the side of an increase in inflation; at the end of 1989, that equilibrium price had moved into approximate equality with the actual price level, indicating that basic inflation pressures had steadied.

In 1989, compositional shifts within M2 reflected the pattern of interest rates, the unexpected volume of tax payments in the spring, and the flow of funds out of thrift deposits and into other instruments. Early in the year, rising market interest rates buoyed the growth of small-denomination time deposits at the expense of more liquid deposits, as rates on the latter accounts adjusted only sluggishly to the upward market movements. The unexpectedly large tax payments in April and May contributed to the weakness in liquid instruments, as those balances also were drawn down to meet tax obligations. As market interest rates fell, the relative rate advantage reversed in favor of liquid instruments and the growth in liquid deposits rebounded, boosted as well by the replenishment of accounts drained by tax payments.

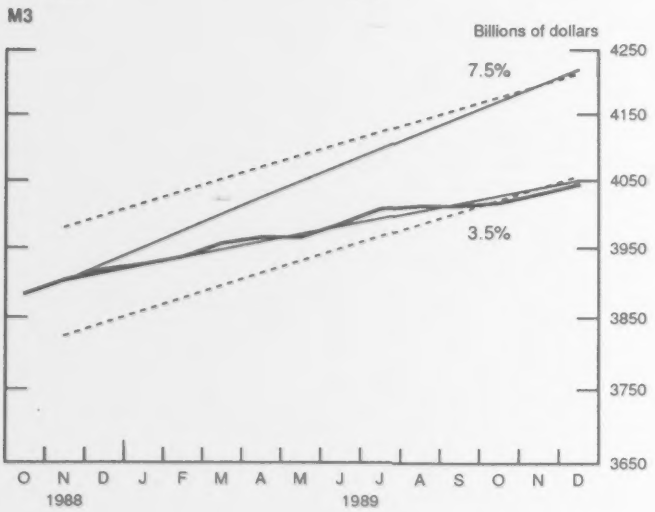
The M1 component of M2 was especially affected by the swings in interest rates and opportunity costs last year, and in addition was buffeted by the effects of outsized tax payments in April. After its 4¼ percent rise in 1988, M1 grew only ½ percent in 1989, with much of the weakness in this transactions aggregate occurring early in the year. By May, M1 had declined at about a 2½ percent annual rate from its fourth-quarter 1988 level, reflecting a lagged response to earlier increases in short-term interest rates and an extraordinary bulge in net individual tax remittances to the Treasury. From May to December, M1 rebounded at a 4 percent rate as the cumulating effects of falling interest rates and post-tax-payment rebuilding boosted demands for this aggregate. M1 velocity continued the upward trend that resumed in 1987, increasing in the

M2 and M3: Target Ranges and Actual Growth



Rate of growth

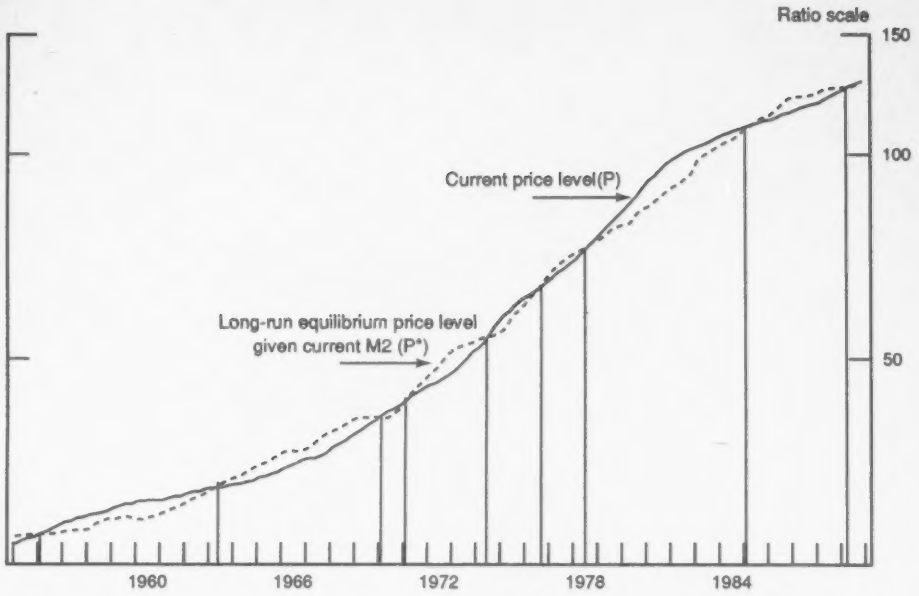
1988:4 to 1989:4
4.6 percent



Rate of growth

1988:4 to 1989:4
3.3 percent

Inflation Indicator Based on M2



The current price level (P, the solid line) is the implicit GNP deflator, which is set to 100 in 1982.

The long-run equilibrium price level given current M2 (P*, the dashed line) is calculated as $P^* = (M2 \cdot V^*)/Q^*$, where V^* is an estimate of the long-run value of the GNP velocity of M2—the mean of V2 from 1955:1 to 1988:1—and Q^* is a Federal Reserve Board staff measure of potential real GNP.

The vertical lines mark the quarters when the difference between the current price level (P) and the long-run equilibrium price level (P*) switches sign, and thus when inflation, with a lag, tends to begin accelerating or decelerating.

For more details, see Jeffrey J. Hallman, Richard D. Porter, and David H. Small, *M2 per Unit of Potential GNP as an Anchor for the Price Level*, Staff Studies 157 (Board of Governors of the Federal Reserve System. 1989).

first three quarters before turning down in the fourth quarter of 1989.

The shift of deposits from thrift institutions to commercial banks and money fund shares owed, in part, to regulatory pressures that brought down rates paid by some excessively aggressive thrifts. Beginning in August, the newly-created Resolution Trust Corporation (RTC) targeted some of its funds to pay down high-cost deposits at intervened thrifts and began a program of closing insolvent thrifts and selling their deposits to other institutions – for the most part, banks. On balance, the weak growth of retail deposits at thrifts appears to have been about offset by the shift into commercial banks and money market mutual funds, leaving M2 little affected overall by the realignment of the thrift industry.

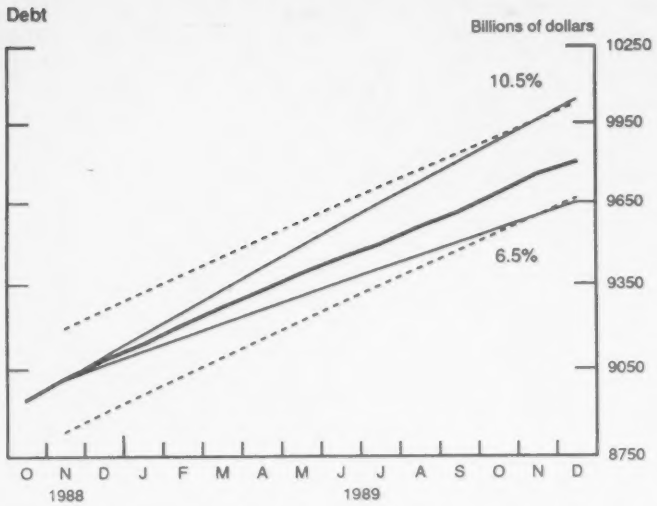
M3 was largely driven, as usual, by the funding needs of banks and thrifts; under the special circumstances of the restructuring of the thrift industry, it was a less reliable barometer of monetary policy pressures than is normally the case. After expanding 6¼ percent in 1988, M3 hugged the lower bound of its 3½ to 7½ percent target cone in 1989, closing the year about 3¼ percent above its fourth quarter-1988 base. In 1989, bank credit growth about matched the previous year's 7½ percent increase, but credit at thrift institutions is estimated to have contracted a bit on balance over the year, in contrast to its 6¼ percent growth in 1988. This weakness in thrift credit directly owed to asset shrinkage at SAIF-insured savings and loan institutions; credit unions and mutual savings banks expanded their balance sheets in 1989. In addition, funds paid out by the RTC to thrift institutions and to banks acquiring thrift deposits directly substituted for other sources of funds. As a result, thrifts lessened their reliance on managed liabilities, as evidenced by the 14¾ percent decline over the year in the sum of large time deposits and RPs at thrifts. Institution-only money market mutual funds were bolstered by a relative yield advantage, as fund returns lagged behind declining market interest rates in the second half of the year; these funds provided the major source of growth for the non-M2 component of M3. On balance, the effects of the thrift restructuring dominated the movements in M3, and the rebound in M2 in the second half of the year did not show through to this broader aggregate. As a consequence, the velocity of M3 increased 3 percent in 1989, 1¼ percentage points faster than the growth in M2 velocity, and its largest annual increase in twenty years.

Many of the assets shed by thrifts were mortgages and mortgage-backed securities, but this appears to have had little sustained effect on home mortgage cost and availability. The spread between the rate on primary fixed-rate mortgages and the rate on ten-year Treasury notes rose somewhat early in the year, but thereafter remained relatively stable. The share of mortgages held in securitized form again climbed in 1989, facilitating the tapping of a base of investors. Diversified lenders, acting in part through other intermediaries, such as federally-sponsored agencies, mostly filled the gap left by the thrifts. However, some shrinkage of credit available for acquisition, development, and construction appeared to follow from FIRREA-imposed limits on loans by thrifts to single borrowers, though the reduction in funds available for these purposes probably also reflected problems in some residential real estate markets.

Aggregate debt of the domestic nonfinancial sectors grew at a fairly steady pace over 1989, averaging 8 percent, which placed it near the midpoint of its monitoring range of 6½ to 10½ percent. Although the annual growth of debt slowed in 1989, as it had during the preceding two years, it still exceeded the 6½ percent growth of nominal GNP. Federal sector debt grew 7½ percent, about ½ percentage point below the 1988 increase – and the lowest rate of expansion in a decade – as the deficit leveled off. Debt growth outside the federal sector eased by more to average 8¼ percent, mostly because of a decline in the growth of household debt. Mortgage credit slowed in line with the reduced pace of housing activity, and consumer credit growth, though volatile from month to month, trended down through much of the year. The growth of nonfinancial business debt slipped further below the extremely rapid rates of the mid-1980s. Corporate restructuring continued to be a major factor buoying business borrowing, although such activity showed distinct signs of slowing late in the year as lenders became more cautious and the use of debt to require equity ebbed.

The second half of 1989 was marked by the troubling deterioration in indicators of financial stress among certain classes of borrowers, with implications for the profitability of lenders, including commercial banks. In the third quarter, several measures of loan delinquency rates either rose sharply or continued on an uptrend. Delinquency rates on closed-end consumer loans at commercial banks and auto loans at "captive" auto finance companies were close to historically high levels. At commercial banks as a whole in 1989, both delinquency and charge-off rates for real estate loans were little changed from the previous year. Still, problem real estate loans continued to be a drag on the profitability of banks in Texas, Oklahoma, and Louisiana; in the second half, such loans emerged as a serious

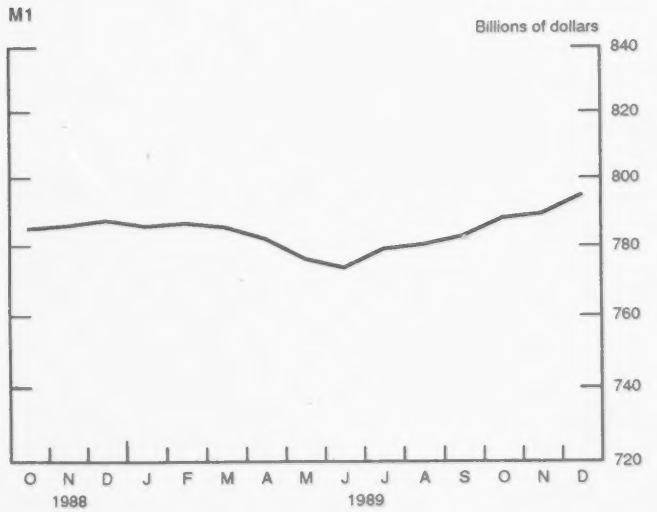
Debt: Monitoring Range and Actual Growth



Rate of growth

1988:4 to 1989:4
8.1 percent

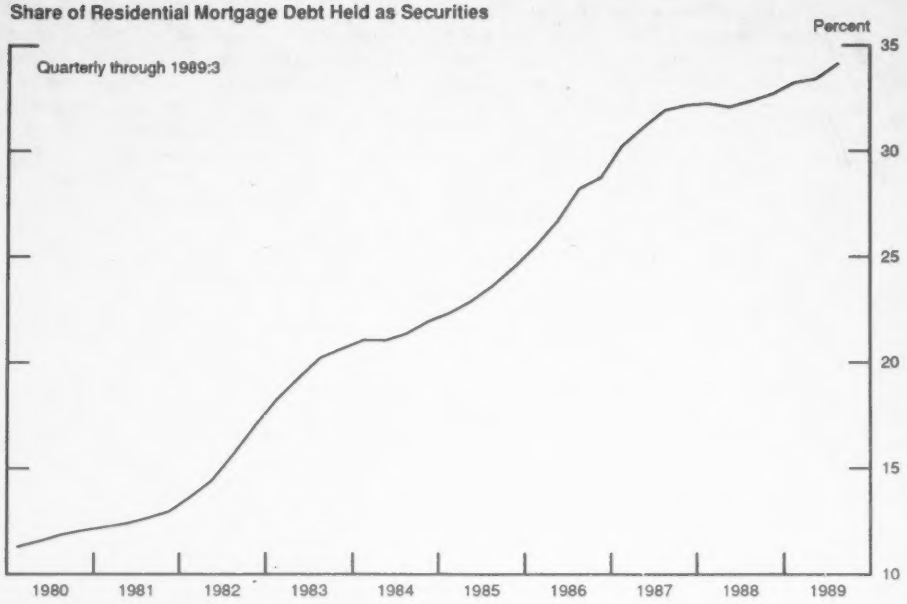
M1: Actual Growth



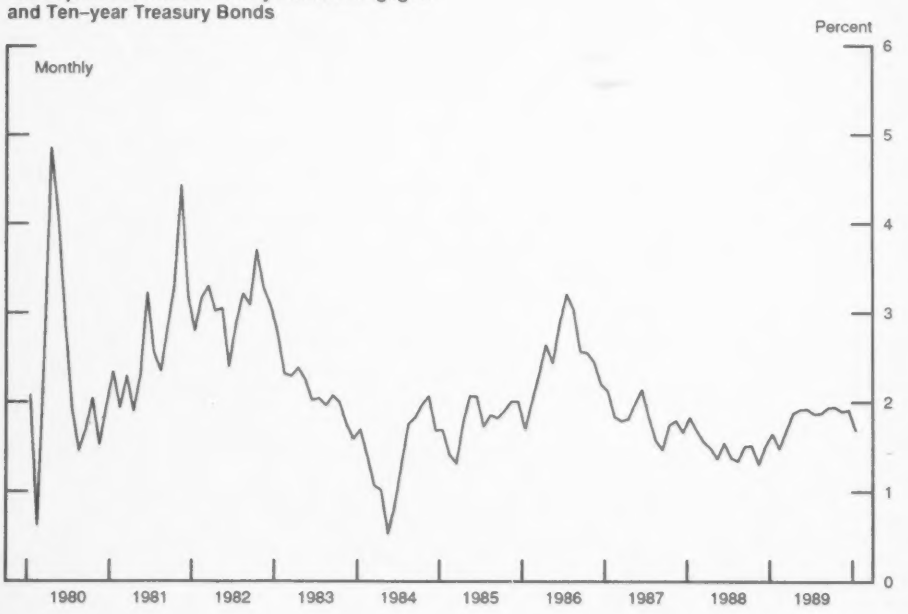
Rate of growth

1988:4 to 1989:4
0.6 percent

Share of Residential Mortgage Debt Held as Securities



Rate Spread Between Primary Home Mortgages and Ten-year Treasury Bonds



problem for banks in New England. On the other hand, smaller, agriculturally oriented banks continued to recover from the distressed conditions of the mid-1980s. Since 1987, agricultural banks have charged off loans at well below the national rate, and their nonperforming assets represented a smaller portion of their loans than that for the country as a whole.

The upswing in the profitability of insured commercial banks that began in 1988 only extended through the first half of 1989. A slowing in the buildup of loan-loss provisions, along with improvements in interest-rate margins, contributed to these gains, with the money center banks showing the sharpest turnaround. Information for the second half of 1989, although still incomplete, clearly points to an erosion of these profit gains, in part, because of problems in the quality of loans. Several money center banks sharply boosted their loss provisions on loans to developing countries, while evidence of rising delinquency rates on real estate and consumer loans suggested more widespread weakening. Despite these developments, the spread of rates on bank liabilities, certificates of deposit and Eurodollar deposits, over comparable Treasury bill rates narrowed early in 1990.

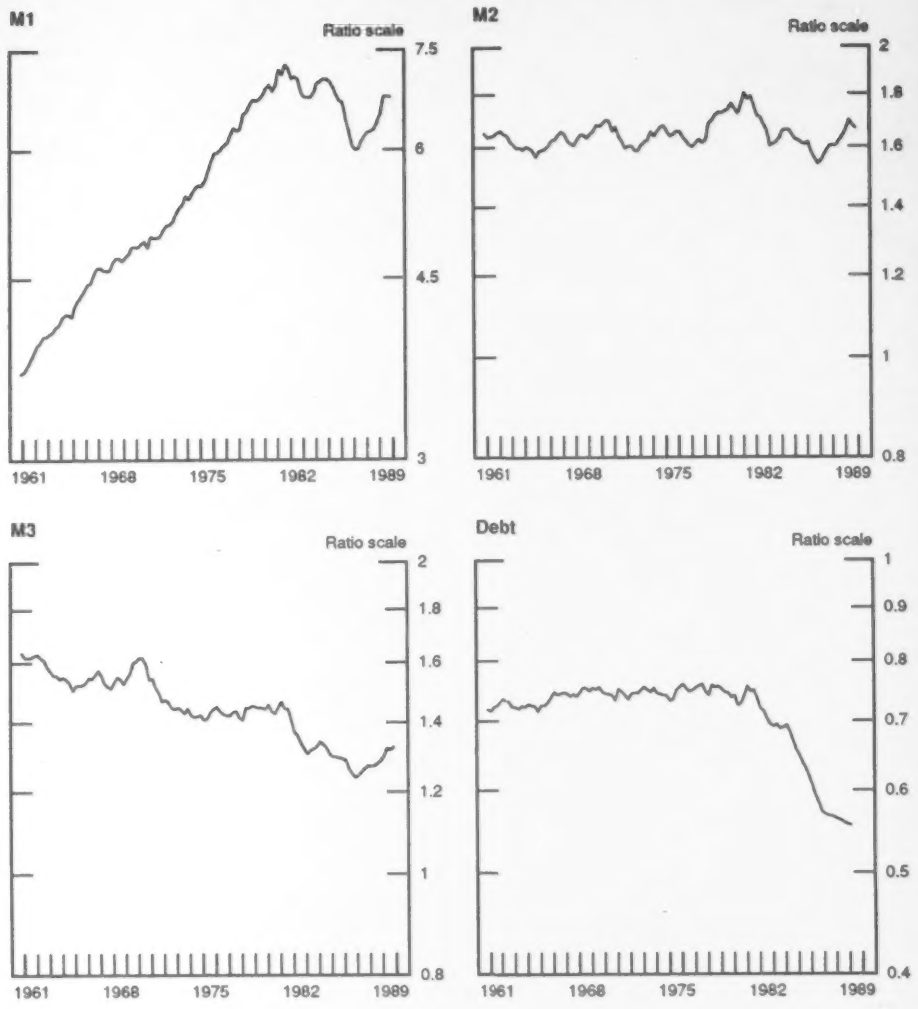
Growth of Money and Debt *(Percent Change)*

	M1	M2	M3	Debt of domestic nonfinancial sectors
Fourth quarter to fourth quarter				
1980	7.4	8.9	9.5	9.5
1981	5.4 (2.5)*	9.3	12.3	10.2
1982	8.8	9.1	9.9	9.1
1983	10.4	12.2	9.8	11.1
1984	5.4	7.9	10.6	14.2
1985	12.0	8.9	7.8	13.1
1986	15.5	9.3	9.1	13.2
1987	6.3	4.3	5.8	9.9
1988	4.3	5.2	6.3	9.2
1989	0.6	4.6	3.3	8.1
Quarterly growth rates (annual rates)				
1989 Q1	−0.1	2.3	3.9	8.4
Q2	−4.4	1.6	3.3	7.9
Q3	1.8	6.9	3.9	7.2
Q4	5.1	7.1	2.0	8.0

*Figure in parentheses is adjusted for shifts to NOW accounts in 1981.

Velocity of Money and Debt

(Quarterly)



The CHAIRMAN. Thank you, Mr. Chairman.

Before we go to the question period, we've had two other members arrive, and I want to ask them for any opening comment they want to make.

Senator Sanford.

Senator SANFORD. Thank you very much.

I'll be just a minute or two, if I may put my statement in the record.

Thank you, Chairman Greenspan, for your comments and your leadership. I appreciate you being here.

I was fascinated, as were a great many other people, when the once mighty Drexel, Burnham collapsed before our very eyes this week, bringing back to our attention the many abuses that had been brought about by the leverage buyout and hostile takeover mania and the junk bond phenomenon. Now a great many people are saying that this era is over, but the abuses that permitted it are not over, and I think we need to consider the debt and the implications of the debt on our competitiveness. I'll come back to that in the question period.

Today Jim Sasser and I are introducing legislation to address some of these LBO and hostile takeover abuses, including the overleveraging and the trend toward shorter and shorter term investment strategies to see if we can create incentive for longer-range outlooks.

I'm also concerned not only by the great corporate debt that has accumulated, but by our national debt and what it has to do with the interest rates, and I'll come back to that as well.

I'm bothered by the fact that under the President's budget proposal, as I understand it, we will continue and possibly exceed $4 trillion in national debt before we seriously consider steps to reduce that debt or examine its affect on American financing.

All of these concerns are highlighted by recent projections of what the cost would be and what the impact would be if we experienced a recession of the likes of the mid-1970's and the few cushions we would have to protect ourselves.

So these issues primarily of debt and the implications of debt, both corporate and national, I think are matters of serious concern for this committee.

Thank you, and I would like to submit the balance of my statement for the record.

OPENING STATEMENT OF SENATOR SANFORD

Senator SANFORD. Thank you, Mr. Chairman, and I too would like to welcome Chairman Greenspan back before this committee for his semiannual report on monetary policy.

The last few weeks have certainly proved to be interesting ones in the economic life of this country. I know all of us watched with considerable concern and interest as the once-mighty Drexel, Burnham collapsed before our very eyes. Its fall raises a host of issues about the capital position of our investment banks and their broker-dealers, and the relationships between our banks, the Federal Reserve and the SEC in situations in which any major market player is in jeopardy. While I commend the Federal Reserve for its

efforts in monitoring the situation to ensure that the problems at Drexel did not spill over to other parts of the market, I remain concerned about the implications for the junk bond market, the overall capitalization of our firms, and in general amount of leverage held by many of our corporations.

Indeed, while many have said that the fall of Drexel marks the end of the debt-driven takeover and leveraged buyout era, I remain troubled that many of the abuses that we have witnessed during this "decade of debt" have not been taken care of, and the drive to come up with new techniques for more deals or to pick up the pieces of some of the deals that have gone sour remains strong. In order to ensure that we don't go through this cycle again and that whatever is done to restructure the bad deals of this decade are done in a way that ensures proper disclosure and proper financing, I am today, along with my colleague, Jim Sasser, introducing legislation to address some of these abuses, including overleveraging and the trend toward shorter and shorter term investment strategies.

In recent days we have also witnessed significant drops in the Tokyo stock market, with accompanying increases in interest rates. The high rates in Japan and Germany and their implications for our market only serve to point out how interdependent our markets have become and how difficult your job is, Chairman Greenspan, when it involves movements in markets other than our own.

This week has also been a week when we have seen the single largest increase in the Consumer Price Index since June 1982. I am concerned that all of these developments portend a rougher cycle for our economy than one might glean from looking at the assumptions in the President's budget. I worry over the dilemma you face, Chairman Greenspan, in trying to combat the inflationary pressures that would seem to be indicated by the large increase in the CPI, with the desire of the administration for lower interest rates.

I look forward to your testimony and I thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Sanford.

Senator Kerry.

Senator KERRY. Thank you, Mr. Chairman. I have a statement which I would like to make a part of the record.

The CHAIRMAN. By all means.

Senator KERRY. I would simply like to, and maybe I'll reserve this for my questions in greater length, but I know, Mr. Chairman, you don't particularly want to focus on one region over another and you try to avoid regional discussions.

All economics in many ways is local to many of us and, as I know you know, New England is undergoing some serious difficulties now which measured against the rest of the Nation don't put it into a disaster category, but which measured against its prior performance over the last decade is a very, very significant change.

We are constrained because of the budget deficit in our ability to be able to react in some of the normal ways that one might react through either tax expenditure or various creative programs here in Washington. So perhaps we look to the Fed as our single-most important resource for liquidity and loosening of credit and the ability to be able to respond quickly.

I want to ask you a couple of things about that in the comments, but I believe that everyone is skirting the realities of the problem that Senator Sanford just alluded to and that we are terrific at making speeches about, but not very good at really doing something about them. That's the budget crisis that you referred to in your own comments.

Though I fear that the Fed itself has perhaps not leveraged its prestige and power in a way that it might to help force people to confront the realities of some of the choices we have right now, and I'm sure that in the course of our comments and discussion here this morning some of that will be drawn out further, and I would like to in my own questions.

But let me, Mr. Chairman, ask if I could make my formal comments part of the record.

The CHAIRMAN. By all means.

OPENING STATEMENT OF SENATOR KERRY

Senator KERRY. Massachusetts, and New England, is experiencing a serious economic slowdown. Unemployment is inching up, incomes are constant or falling, homeowners are seeing their equity disappear, businesses are finding it more and more difficult to get credit, and sectors like construction are in a recession. Business leaders, workers, Government officials, consumers are concerned, disappointed and frustrated.

Of course, most economists who have looked carefully at the New England economy are much more optimistic about the future than the average citizen. The consensus is for a slowdown in 1990 and 1991 with unemployment rising to near the national average and income dropping from 126 percent of the national average to 124 percent. Not good news, not the right direction, but not a disaster either.

Nothing would be more welcome to the Massachusetts economy than a reduction in interest rates, a loosening up of credit. And, I urge you to consider this objective, as you make the tough balancing decisions between growth and stability. We need your help to get Massachusetts and the northeast growing again. In fact, the Fed is our only real hope for help out of Washington.

Recently we have seen interest rates move, from my perspective, in the wrong direction, away from growth. Thirty-year treasury bonds have risen almost a full percentage point recently to 8.7 percent, compared to their 7.9 percent December average. I understand that inflation fears and the Federal budget deficit contribute to increased interest rates and to historically high "real" interest rates. Obviously, these factors place serious constraints on the Feds willingness to undertake a more stimulative monetary policy.

But Mr. Chairman, New England's hope is in the Fed because, while the budget deficit constrains the Fed's freedom, it completely eliminates the use of traditional tax and targetted spending policies to assist sectors and regions suffering economic difficulties in most cases.

It is ironic to be pointing this out during hearings required by the Humphrey Hawkins bill. Recognizing that monetary policy was a blunt instrument, it authorized micro economic interventions to

mitigate specific sectoral or regional economic problems. Ten years later, as a result of hundred billion dollar deficits we find ourselves unable to take steps such as countercyclical revenue sharing, job training, public works and other targetted anti-recession measures.

In short, the deficit is paralyzing our Government's ability to respond to regions in need.

Mr. Chairman, our failure to get our budgetary house in order is putting our people in serious jeopardy—and yet we fiddle. And it is not only Massachusetts or New England that is at risk. The same forces that make Washington part of the problem rather than part of the solution to our region's problems, will undercut our nation's ability to bounce back from the recession that we all hope, but none of us know, will not materialize.

So why don't we come to grips with the deficit? Why don't we really do what we thought we were doing when we passed Gramm-Rudman-Hollings? I'll tell you why. Because the President does not want to be the bearer of bad news, let alone be the source of action that, while prudent, may hurt a bit. And, Congress is unwilling to take the necessary action, unable to do so really, without the full cooperation and engagement of the President. The President alone can lead on this matter and for 10 years we have not had a President who would do so.

So we don't tell each family how much of their tax dollar each year just goes to pay interest on the debt. And we don't tell each family how much more in interest they are paying on everything they buy on credit, because of the deficit so we don't tell each family what job and income opportunities they missed because the deficit sopped up money that otherwise would have been used for investment. So we don't tell each family the whole truth about all the ways this deficit robs them of their future and America of its place in the world.

Mr. Chairman, Congress and the President have been masquerading as budgetary Houdinis. We placed the loaded pistol of Gramm-Rudman-Hollings to our head and pulled the trigger, but with floors that drop-out, smoke and mirrors, the bullet is missed. Having learned that trick we have honed that slight of hand to a science.

Well we in Massachusetts and New England are now a bit more aware of the price of budgetary trickery, no matter how cleverly it is done, and we are paying yet another price for it. I pray that Mr. Greenspan's crystal ball gazers are correct and that we have time to show our guts, deal with the deficit before the next recession hits. And I urge Mr. Greenspan to use his personal and institutional prestige to put more pressure of Congress and the President to come to grips with the budget deficit.

The CHAIRMAN. Chairman Greenspan, let me say that I appreciate the statement that you've given us today and particularly the fact that you've addressed directly some of the items that I had asked that you respond to.

I must say I marvel at your ability of language. Yesterday we had President Havel speaking to us in the Joint Session, and it was really a magnificent occasion. While the exact use of words isn't precisely the same, your ability to weave through these complicat-

ed subjects is really I think quick extraordinary, and I say that as a compliment.

I realize that in almost everything you say, there is the potential for it being exaggerated beyond what you might intend. That's the world in which we live.

Mr. GREENSPAN. I've noticed. [Laughter.]

The CHAIRMAN. So have we.

I want to take you back, however, to page 6 of your statement, if you could just go back there for a minute. As I was following you through the statement in that first paragraph which carries over from page 5, I noticed that you omitted speaking a line that reads as follows: "Although the CPI for January, as expected, showed a sizable jump in energy and food prices in the wake of December's cold snap, a reversal is apparently underway."

I'm interested in the inflation outlook. Obviously it's a difficult thing to judge, but can you shed some light on this? Did you not mention that for a reason, or has your thinking changed?

Mr. GREENSPAN. No. The only reason I didn't mention it is I was trying to shorten my statement. The statement stands as an accurate reflection of the view I hold.

The CHAIRMAN. Well, on that point, the consumer price numbers for January were reported in the morning papers. Even if you take out the effect of the cold wave the effects on energy costs and food costs it looks as if the underlying inflation rate would still be running, on the basis of that month's data, at about a 7 percent annual rate.

I think that's higher than you're now projecting. You may take issue with that as any kind of a basis for a forecast, but it's interesting. Everyone is entitled to an opinion, and everyone seems to have one, but your former colleague, Andrew Brimmer, is quoted this morning as saying that, in his view at least, the underlying inflation pressures are still substantial and that he would be concerned about that.

I'm wondering if this fresh information is a cause for concern or not?

Mr. GREENSPAN. I think not, Mr. Chairman. We have looked at those data in some detail, and clearly the .6 percent increase, so-called ex-food, ex-energy, was higher than any of us would have forecast, and when one looks at it, there are a couple of things which did surprise us as somewhat different from what we would have forecast.

When looking at the issue of inflation, one should try not to be involved so much with an individual month or an individual series. For example, one of the things that we do at the Federal Reserve is try to build up the cost structure underlying our price indexes, not by adding up the individual price changes themselves, but by trying to disaggregate the price structure in terms of labor costs, imported materials, energy costs, capital costs, and in a sense, to look at the level of prices as the sum of a number of different components in order to give us a different view as to whether the underlying rate is accelerating, decelerating, or doing something which is other than is shown in the direct price statistics.

And as best we could judge at this particular stage, while the rate of inflation is higher than we would like, and I've said that

innumerable times, there is no evidence of which I am aware that it is accelerating. In fact, we have every reason to hope, if not believe, that it may work its way in the other direction.

So while I didn't like the statistic that was published, I must say to you it did not give me any great concern.

The CHAIRMAN. So your best estimate now, the Fed's estimate for the inflation rate for this year, 1990, is expected to be what?

Mr. GREENSPAN. Well, the members of the Federal Open Market Committee, whom we polled, came up with 4 to 4½ percent in the Consumer Price Index. We, as an organization, don't actually forecast. The only forecasts that we have are a polling of the FOMC, and while I grant you it's very difficult to differentiate the FOMC from the Federal Reserve System as a whole, it's not a formal statistical, elaborate macroeconomic forecast. It is an averaging of the impressions or forecasts of individual members, and it's really the view of what they think is likely to materialize. Four to 4½ percent is a number which I personally find no particular quarrel with.

The CHAIRMAN. You find no particular quarrel with, again this sort of gets into the use of words and nuances and avoiding exaggerated reactions to nuances or of words. I take it then that your own view is that we're looking at something in the 4 to 4½ percent range as nearly as one can tell today; is that a fair summary?

Mr. GREENSPAN. Yes, sir.

The CHAIRMAN. We're going to try to stay with the clock today because I know we all have things we want to cover and I very much want to get to some other subjects.

Senator Heinz.

Senator HEINZ. Thank you, Mr. Chairman.

Chairman Greenspan, Senator D'Amato used the term soft landing and he complimented you on appearing to have achieved it. Staying in the air for any length of time in this country depends on having an adequate supply, not an excessive supply, but an adequate supply of debt.

The Fed has for good reason pursued a policy of trying to curtail the excessive creation and use of debt, but if the events in Eastern Europe cause Japan and Europe generally to invest in the EC, and if West Germany makes massive capital investments in Eastern Europe, particularly in East Germany, and thereby press on the availability of capital causing interest rates to rise, is it possible that the soft landing that we're attempting to navigate could run out of fuel and there could be a sudden and unexpected accident? I'm not saying is it probable.

Mr. GREENSPAN. Oh, it's certainly possible. The difficulty with a number of the discussions that we invariably have in committee hearings or elsewhere is that it is very difficult to convey probabilities. I find, for example, that when one makes a judgment about what is going to happen and what is probable and what is improbable, we're dealing with very fragile pieces of information and really a very fragile sense of how the future will unfold.

Senator HEINZ. Let me go on to the next question. I agree with you, but my question though is were you to see that happening, what could you do about it in order to avoid an accident or a crash landing?

Mr. GREENSPAN. Well, let me first say that I appreciate Senator D'Amato's views and I hope he is right, but I think we're not, as I put it in my formal remarks, out of the recessionary woods as yet, and I would like to emphasize that. In other words, I think that the probabilities are, as I indicated in earlier testimonies on the Hill, somewhat better than 50/50 that we've passed the point of maximum weakness.

Senator HEINZ. Mr. Chairman, I'm glad you make that point. I'm going to put some words in your mouth. You don't have to agree with them, but what you're saying is the Lunar Lander is approaching the surface and you want to make sure there is some reserve fuel in the tank just in case we got the altitude wrong.

Mr. GREENSPAN. Let me say this. We've not landed yet. I think we are much farther along in a positive way than I frankly thought we would have been if one takes it from a forecast of 3 to 6 months ago.

Senator HEINZ. Mr. Chairman, I commend you on your comment. I think it's very helpful and very constructive.

Let me go to the next subject. We're under a time limitation and I have an 11 o'clock meeting with Secretary Darman that I must get to.

One of the issues that has arisen is the question of the high-yield debt market and what has happened to it. Of course, what has happened to it is there isn't one much to speak of any more. Some people have said that maybe the regulators are making a mistake in discouraging investments on all high-yield securities.

What they say is that there is a difference between the kind of the "debt for debt's sake" type restructurings of R.J. Reynolds and so forth, and those high-yield bonds that were used to finance the growth of Silicon Valley. Certainly there would appear to be a difference between those two kinds of uses of high yield debt.

Is that a valid distinction? If it is, do you have any concern that the crash of the junk bond market, it has not make a soft landing, is going to jeopardize the ability of growth companies to raise money? If you are concerned about it, is there anything somebody ought to be doing about it?

Mr. GREENSPAN. Well, I agree with the implication of what you're saying, Senator. I think it is important to distinguish between various different types of so-called junk bonds, and most importantly to look at what they are used for.

One of the problems that we've all had with junk bonds in recent years is that they have been employed to a very large extent to substitute for equity in our system. We, for example, knows that the net stock issuance reduction, or more exactly the liquidation of equity was well over $100 billion for the last 2 years annually, and it goes back for a number of years.

The junk bond substitution for a large part of that equity really means that we look at corporate balance sheets that are substituting junk bonds for equity. That clearly is something which, in my view, undercuts the flexibility of the corporate sector and its ability to respond.

Senator HEINZ. Mr. Chairman, I thank you for your statement. I'm sorry, I didn't mean to interrupt you.

Mr. GREENSPAN. Just one more point. I think you are quite correct, and that is that should not undermine the view that there is a role for less than investment grade securities, and I think they will continue to be used over the years though to a lesser extent than has been the case, that is, less than $200 billion, but I think nonetheless it will have an important niche in our financial structure.

Senator HEINZ. Mr. Chairman, could I continue with 30 seconds more?

The CHAIRMAN. Yes. If it's really 30 seconds. I want to hold everybody to the time today so we can get around.

Senator HEINZ. It's really 30 seconds.

The 10 distinguished economists, Henry Aaron, Charlie Shultz, and Paul Samuelson among them, wrote to me and others with respect to the Moynihan payroll tax cut proposal. They said in part that if enacted the proposal would do serious harm to the economy, the immediate effect of the $55 billion cut in payroll taxes would worsen the Federal deficit by an equivalent amount, and that the Federal Reserve would have to raise interest rates to deal with this, penalizing investment generally and long-term investments particularly. Would you agree?

Mr. GREENSPAN. I would just as soon not comment directly on all of the various elements within that letter and what it implies, but obviously, as I've said in different forums, I do not support Senator Moynihan's particular proposal.

Senator HEINZ. Mr. Chairman, thank you very much.

The CHAIRMAN. Thank you.

Senator Shelby.

Senator SHELBY. Thank you, Mr. Chairman.

Chairman Greenspan, in your written remarks you talk about an outstanding debt of U.S. held by foreigners of, what, $1.5 trillion and possibly growing. Are those numbers basically correct?

Mr. GREENSPAN. Yes.

Senator SHELBY. I know we basically know, but I'm not sure everybody out in America knows how dependent we are on foreign investors to carry a lot of our debt because of our inability to live within our means. Could you just focus on that a minute? You have on this committee on other occasions.

Mr. GREENSPAN. Although the aggregate effect on interest rates, on exchange rates and the like is very significantly impacted by the gross levels of stock of debt, there is an important issue with respect to the question of our so-called current account deficit. Essentially, in order to maintain our level of domestic investment, we are borrowing fairly substantial amounts of savings from abroad annually, well over $100 billion.

To the extent that we endeavor to support our domestic investment level from those sources we have to be sufficiently attractive with respect to rates of return to be able to, in effect, make certain that the world's aggregative savings allocates itself enough in our direction to support our level of domestic investment.

Senator SHELBY. In other words, we have a world savings pool that people are dipping into.

Mr. GREENSPAN. That's correct, we are dipping into that pool.

Senator SHELBY. Yes, that we're dipping into.

Mr. GREENSPAN. And I would say, as I have said innumerable times in the past, I don't think we should depend on that in any extensive way. It is very important for us to bring down the Federal budget deficit as a major means to create a much larger domestic savings, savings to finance our domestic investment, so that we need not be involved with very substantial borrowing, so to speak, of savings of foreigners.

Senator SHELBY. Chairman Greenspan, doesn't it compound your job as the Chairman of the Board of Governors of the Federal Reserve and the Central Bank here to control our economic destiny? Isn't it going to be harder for you and your compatriots to do this rather than what we used to do say 20 years ago?

Mr. GREENSPAN. Well, there is no question, Senator, that it is more difficult, but, as I said in my prepared remarks, that doesn't mean that it is impossible. In fact, I'm saying that we can do it. I mean the tools are there.

Senator SHELBY. But it makes it harder, doesn't it?

Mr. GREENSPAN. It does make it more difficult, yes, no question.

Senator SHELBY. What makes our markets at time run differently from say the Japanese financial markets and the German markets? Is it local demand and so forth?

Mr. GREENSPAN. Do you mean why would their interest rates move differently from ours?

Senator SHELBY. Right, sometimes like their bonds.

Mr. GREENSPAN. Well, I would think that to a large extent it's local demand. A major difference, however, usually reflects the expected rate of inflation in the domestic currencies.

Senator SHELBY. Is that the psychology of inflation within their psyche?

Mr. GREENSPAN. Yes. In other words if, for example, in country "X" everyone expected that their inflation rate would be 3 percentage points greater than in country "Y", you would expect the nominal interest rates in country "X" to be on average 3 percentage points higher.

Senator SHELBY. They would want the interest rates bid up to reflect that.

Mr. GREENSPAN. I'm sorry?

Senator SHELBY. They would want the interest rate pay bid up to reflect that.

Mr. GREENSPAN. Yes, almost fully because people essentially lend in real terms. In other words, what they are doing is they are taking their current purchasing power, foregoing its use, and lending it to somebody, and they want it back in real terms. That's the reason why that process works the way it does.

Senator SHELBY. Mr. Chairman, isn't the psychology of inflation creeping back in the American psyche now when you read like this morning, and Chairman Reigle mentioned it and others, where the CPI has gone up and the wholesale price index the month before much more than the numbers you've been talking about of 4 and 4½ percent.

The average American businessman or individual, they see that, and isn't that bringing back what we had 10 years ago, the psychology of inflation and, if so, is that very dangerous?

Mr. GREENSPAN. Well, it would be if it were true. I must tell you, Senator, I don't see any signs of that. In fact, I still sense that there is in the American business structure a general awareness that prices are basically soft, that you don't get any real sense of an acceleration, and when you look at the details of the numbers, you don't see that process moving.

Should it occur, then I think it could be quite dangerous, but I must say to you that I don't see it.

Senator SHELBY. But there are short-term numbers out there that we're seeing now that if they were to continue, and I assume you're saying they are not going to continue.

Mr. GREENSPAN. I would tell you this, that I would be most surprised.

Senator SHELBY. Most surprised.

Mr. GREENSPAN. Yes.

Senator SHELBY. We would be surprised, too, from what you've said.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator D'Amato.

Oh, excuse me just one moment. I see Senator Pressler has come in.

Senator Pressler, did you have an opening comment you wanted to make?

Senator PRESSLER. Very briefly, I have an editorial from the Rapid City Journal regarding the issue of the Internal Revenue Service no longer withhold taxes that foreigners owe us on investments here, and if I'm able to stay I would like to ask a question about that or would appreciate the Chairman's comments, and also I have some questions for the record. I'm also in a product liability hearing over in the Commerce Committee and will try to stay.

I thank the Chairman very much, and I'll submit my questions for the record.

The CHAIRMAN. Thank you, Senator Pressler.

Senator D'Amato.

Senator D'AMATO. Thank you, Mr. Chairman.

Mr. Chairman, as you know, we operate the Federal Government on a cash basis making no distinction between tax dollars spent on consumption and those spent on investments that have many years of useful life. Indeed, the General Accounting Office has said that this process creates a budget bias against capital investment programs.

What is your opinion about the benefits of modifying the present Federal budget process to eliminate this bias against long-term investment by the Government, and is capital budgeting a sounder method from an economist's point of view?

Mr. GREENSPAN. Well, Senator, while I do think there is that sort of problem, I think that the issue which has been discussed at great length over the years of going to a capital budget for the Federal Government risks a misunderstanding of what the deficit itself is meaningful for.

There are I think for planning purposes very important uses of capital budgeting and distinguishing it, and in fact we do. We do keep accounts separately in some considerable detail. It is very important, however, when looking at the Federal budget from a finan-

cial point of view to remember that it doesn't matter at all whether something is borrowed for a long-term capital project or whether it is borrowed for short-term consumption unless the long-term capital project has a self-amortizing feature, meaning it has cash coming back and that in a sense it's like a business, in which case then the financial market's effect is different.

But as a general rule, the vast majority of capital projects of the Federal Government do not have income-returning aspects, and so far as how they are financed, they are indistinguishable from consumption items in the Federal budget, and their impact on the money markets on interest rates, and on the financial structure is in fact indistinguishable.

So I would say from the point of view of looking at the Federal deficit and its financing, it is very important that we not make that segregation, although from analytical and efficiency of Government points of view, it is useful to have the differences, as you point out, and I hope that when we evaluate the Government outlays, we do take into account the fact that certain projects are not consumption, that they are investments and they do go over a long period of time. That should be kept in mind in making the various expenditures priorities, but not in financing priorities, as I see it.

Senator D'AMATO. I thank you, Mr. Chairman, for making that distinction as it relates to those projects which are long-term and have no dollar revenues to support a different treatment that I think the question of capital budgets always raises.

Let me ask you one more general question as it relates to the Tax Code. I believe that the Tax Code needs to be amended in order to correct the bias against savings.

Would you care to comment in a general way, and I don't want to get you into the sticky issue of if you support Senator So and So's IRA program as opposed to another one, but as it relates to the general proposition are you satisfied or do you believe we could do more to create savings and should taxation be the process in which we attempt to deal with the bias against savings?

Mr. GREENSPAN. Well, Senator, I fully supported the Tax Reform Act of 1986, which I thought was a remarkable construction, and specifically the ability to bring marginal tax rates down as much as we did, which I think was a major factor in improving the ability of the system to save and save in the right way.

I think what remains if one looks at the structural question is the double taxation of dividends, which is an inhibitor of savings.

Senator D'AMATO. They are going to think, my colleagues, that you and I discussed this. You know this is a soft ball for me. Let me go beyond the question of double taxation of dividends. If we were to accept that, what other area should we look at to improve a prejudice for savings, if you would care to comment?

Mr. GREENSPAN. Well, I think there are a lot of different technical things which would fundamentally alter a tax structure and which would improve savings, but they are so far out that I don't think they are realistic possibilities.

Senator D'AMATO. Is there any other one realistic? For example, in England they have a savings pool where they will give to the small investor so many dollars and not tax it if it's put into an investment pool?

Mr. GREENSPAN. Well, that's not dissimilar to the President's plan which has been put forth, which I would be supportive of. I think that we have to distinguish between small changes and big structural changes. I think the smaller changes are not going to make a big difference, but structural changes might, like the double taxation of dividends. There are people who are arguing for a substitution for the income tax of a savings tax, meaning that you get taxed on a progressive basis on how much consumption you have. So you can maintain a progressive tax structure, but essentially not tax savings at all.

I suspect, as most expect who have evaluated this, that that would have a major impact. But that is such a radical change that I think it's a political issue and it's probably not even worth starting to discuss.

Senator D'AMATO. My time has expired, and I thank the Chairman.

The CHAIRMAN. Let me just ask a question for the record as a follow-on to what Senator D'Amato asked. Since the passage of the 1987 Tax Act, have we seen a measurable change and improvement in the savings rate? I know it's a complicated issue, but is there or isn't there?

Mr. GREENSPAN. I would say as to a measurable change, the answer is no. I would think that it's probably largely neutral as best one can see from the data. Although there has been some obvious improvement in the personal savings rate, I would not attribute it to the Act.

The CHAIRMAN. I appreciate that. It's a long area of discussion, and I think it's important.

Senator Graham.

Senator GRAHAM. Thank you, Mr. Chairman.

Mr. Greenspan, it's always constructive to have you here to give us your perspective on current economic conditions.

I would like to focus on two issues, one the current state of the savings and loan industry and our efforts last year at its salvation and, second, the Brady Plan as it has been applied in Mexico.

On the first subject, when the administration presented its S&L plan approximately a year ago, there were a number of economic assumptions upon which it was predicated. Two of those were first that there would be a growth in deposits in the depository institutions that paid into what had been the FSLIC fund of 7.2 percent a year.

When you testified last year you said that in the context of the fact that there had been a less than anticipated growth in that fund since the September 1988 base that it would require not a 7.2 percent, but a 9 percent growth rate over the next 3 to 4 years in order to lift growth to the percentage average upon which the plan had been predicated.

In fact, since March of last year there has been no growth in the fund, and in November there was almost a $9 billion flight of capital from the S&L institutions, and therefore a reduction in the base upon which the premiums could be paid.

The second factor was the interest rate at which the Revcor bonds would be sold. The assumption was a 7.9 percent interest

rate. I believe that the first sale of those bonds was approximately 25 to 50 bases points above that level.

In light of those differences between the assumptions and the reality, do you have any recommendations of what we ought to be doing in terms of reviewing the S&L bailout transaction? I'm particularly concerned that we do not repeat in the 1990's what we did in the mid-1980's, and that is let the situation fester to the point that a manageable problem became the largest financial crisis in the history of the country.

Mr. GREENSPAN. Senator, I certainly agree that the 7.2 percent forecast was wrong. It has been very substantially changed, but I'm not certain that it really fundamentally affects very much. It does clearly indicate a slower flow of premiums into the thrift savings insurance fund. But to the extent that those deposits shifted into commercial banks, they would show up in the bank insurance fund. There would be some loss, however, because there are different rates for both of the funds. But it's not a material issue with respect to the actual total bailout scheme.

In other words, the $50 billion really reflects an evaluation at the time of what the losses are in the assets of the thrift institutions which ultimately impact upon the insurance funds, and the particular assumptions about the rate of growth of thrift deposits did not relate to that calculation. It does relate to other elements within the flows into the funds, and it does have effects, but from the point of view that you're asking, which I assume is the short-term overall bailout financing question, neither one of those two assumptions is really crucial. They affect things at the margin, but the basic problem of financing is going to be what the markdown on assets in those failed institutions is ultimately going to be.

Senator GRAHAM. Mr. Chairman, the second question is your evaluation of the current application of the Brady Plan to Mexico. Three weeks ago documents were signed between Mexico and the various financial institutions.

What will you be monitoring over the next few months to determine the success of the Brady Plan in Mexico, its impact on U.S. commercial banks and its potential applicability to other debtor nations?

Chairman GREENSPAN. Well, obviously the major purpose of the type of financing that took place was to restore basic confidence in the Mexican economy, and there has been clearly a very significant shift that has occurred there over the last several years.

Specific things that one would look at clearly would have to do with the extent of direct investment in Mexico the extent to which foreign capital starts moving in, and certainly the extent to which flight capital which had flowed out moves back in.

So if one wants to look at the question of success or failure, there are a number of things that one looks at, but the fundamental thing that one tries to appraise is the basic Mexican economy, how well is it doing, how well is it growing, what is the level of inflation, what is the level of the budget deficit, and with respect to the international aspects of it, to what extent is capital flowing net into Mexico as distinct from out.

Senator GRAHAM. Thank you.

The CHAIRMAN. Senator Mack.

Senator MACK. Thank you, Mr. Chairman.

Alan, as you know, I have argued in the past that the best way to bring down interest rates is to have a consistent monetary policy to achieve price stability or price rule if you will.

I am convinced that uncertainty about Fed policy breeds price instability and price instability breeds higher interest rates.

It was therefore interesting for me to read the dissenting views by your colleague, Wayne Angell, at a recent December FOMC meeting where he expressed concern that the Fed was responding to indicators of weakness in economic activity that were consequences of somewhat cautious policy responses earlier.

So I would like to read a portion of his views and then ask my question.

> Policy decisions should rely on leading indicators, commodity prices, the exchange rate, the yield curve, and money supply growth. Attention to such indicators has served policy well in the past. During the spring and summer while the dollar was appreciating and commodity prices, including gold, were generally falling, easing of reserve conditions was accommodated by the lower long-term interest rates necessary to undergird housing and other long-term investments. At this meeting, again December, price level indicators were not signaling a need for further ease. In these circumstances, an additional drop in the Federal funds rate coming after two previous easing moves in the fourth quarter could raise doubts about the system's commitment to its objective of price stability, especially given that the easing would further stimulate M2 growth. Under such circumstances, further easing of reserve pressures would tend to accommodate rising prices, foster uncertainty in the financial markets and drive up long-term interest rates, thereby increasing the likelihood of economic instability. Steady policy in pursuit of price stability using forward-looking indicators would reduce uncertainty about price trends, bolster confidence in the dollar domestically and internationally and bring about lower interest rates and higher economic growth.

I apologize for that lengthy reading of that, but my question to you is this. What is your long-term plan to stabilize the price level and assure the purchasing power of money? Can you lay out for us how we are going to get stable prices, low interest rates and stable exchange rates if not by how Governor Angell suggests?

Mr. GREENSPAN. If I could answer the question in 2 or 3 minutes it would imply that we knew a great deal more than we know. The proper answer, because we don't know as much as we would like, is very long but I won't carry it forth today.

What Governor Angell and what you in fact implicitly are raising really by the nature of your question, Senator, is the fundamental question about long-term Federal Reserve strategy which we spend a good deal of time discussing in FOMC meetings. We do try to get a collegial consensus on the general approach, not just counting noses of what the various votes are. And there are differences.

There are differences with respect to the question of how certain are we about certain trends and how certain are we about cause and effect within the very broad world economic structure. And there are differences between the members at different times. I would think that how one behaves in a particular context very much depends on how one evaluates what the forces of cause and effect are.

I would like to say I could write out a simple plan which would hold forth for the next 5 years and bring us down to a noninflationary level of prices. We don't know enough to do that in great

detail, but what we do know is that we need to lean in that direction and look for opportunities to lower gradually the rate of growth of money supply. Ultimately, as I believe I said in my formal remarks, to get an inflation rate down below where it is now we would have to get a somewhat lower longer-term rate of M2 growth. But we have to be very careful how that is done because if you mechanically just push forward it is very easy in the context of what is still a fragile economy to tilt us over.

And I think as a consequence of that all of the various members of the FOMC, while I'd say are in general agreement about where we are heading, have varying different sensitivities of where the problems are or how tight cause and effect relationships are.

So in that sense, I don't know whether I could answer your question very specifically because none of us know enough to give you a firm plan. But we do know enough to understand the processes as they develop and how to handle them so as to bias inflation down. The complexity of what confronts us as we go through a 5-year period is something which we cannot forecast in advance. Therefore, because we cannot forecast all of its various elements in advance, we cannot know in advance precisely step-by-step what is the optimum way of proceeding.

I don't know whether that responds to your question specifically, but obviously I did not agree with my colleague and tennis partner in that particular meeting and we voted in a different way.

Senator MACK. If I could have just a very quick follow-up——

The CHAIRMAN. Yes, if it is quick because I do want to try to stay in the time limits.

Senator MACK. What I would draw out of what you said is that while you would agree with the general direction of consistent policy working toward zero inflation would bring down interest rates but there are things that are going——

Mr. GREENSPAN. Well, we have chosen not to use the word "zero" because our main concern is to get to a non inflationary environment which may or may not require us being down to zero.

Senator MACK. I will just let it go at that.

The CHAIRMAN. Very good.

Senator Kerry.

Senator KERRY. Thank you very much, Mr. Chairman.

Mr. Chairman, I would like to pick up where I left off. Again, I know that regional comments are not your preference, but I really feel compelled to ask you about this both because of your role as the leading commentator and leading person who has a capacity to affect that economy in the country and also because the situation is really so pervasive throughout New England.

I know you have heard from other people on this. I know the Associated Industries have written you. It has been a subject of some discussion and there's really been an enormous transition. I have been hearing from small retailers and others who talk about liquidity crunch, credit crunch, people are having to jump through hoops who have had performing loans for 20 years and never missed an interest payment and so forth. Suddenly loans are being called and so forth.

There's a total change in the texture of the economy not just of Massachusetts but of New England and it has been described in various ways by various people.

Most economists who have looked at the New England and Massachusetts economy appear to be optimistic, which is at great variance from this pervasive attitude among those who are doing business at large. Lynn Brown, the outstanding chief economist at the Federal Reserve Bank of Boston, told a large gathering of business leaders last week:

> We are talking slowdown. We are not talking economic disaster. We have lost our perspective. The orgy of pessimism into which the region is slipping is not warranted. The spotlight on prominent individuals and institutions has given the impression that the impact on the economy is greater than is actually the case.

Summarizing these economists' findings, the Boston Globe editorialized that "the bloom is off the boom, but the regional economy is healthy."

Another very knowledgeable observer, your colleague, John LeWare, a member of the Federal Reserve Board, recently came to a similar conclusion and he expressed it this way in a speech that he made in Boston. He said:

> For a decade the growth and prosperity of the Commonwealth were the envy of the rest of the country. We were on a roll and it didn't look like it would ever stop. Although the posted speed limit on the Mass Pike is 55, most of the traffic whirls along at 65 to 70. After you've been traveling with the crowd well over the limit, if you have to slow down there's a sense of disappointment and frustration.

I would argue, as has John LeWare, that the outlook for Massachusetts and New England is only as depressing as the prospect of having to slow down from 70 to 55 on the pike.

After reviewing the various forecasts for New England, he concluded, "Those numbers certainly don't describe a disaster situation by any means, but they do indicate a real change of pace from that of recent years."

Now again, realizing your reservations and I understand them about dealing with regional economics phenomena, I still believe that where restoring some realism and some basic confidence among New Englanders about their economy is obviously so important I was hoping you might at least say a few words about that outlook based on the observations of both Lynn Brown and John LeWare.

Mr. GREENSPAN. Yes, I would basically agree with the thrust of both parties. It's very difficult to remember how frenetic the level of activity in New England was a couple of years ago, and it was growing at a pace which was clearly unsustainable. The process of merely slowing down creates a sense of deterioration which exaggerates the underlying weakness. It's difficult to believe, but the unemployment rate in Massachusetts, for example, during the fourth quarter of last year was 4.5 percent.

Now what that tells you is that the economy is still relatively tight but there is no question that when you come off a very high rate of growth down to a still moderate rate of growth, it feels like a recession. It has all of the psychological characteristics of something imploding, and one of the reasons it does is that people project that process to continue straight down. It doesn't always happen that way. In fact, most of the time it doesn't happen that

way. But it feels worse than it is, and I do agree with my colleagues that if one steps back and looks at the broader issue you do get a different sense than when you're talking among groups of people in the business community and in the real estate community in the New England area.

Senator KERRY. Well, I appreciate that observation and comment very, very much.

I see my yellow light is on and I just want to ask another quick question if I can.

In talking about American competitiveness, we are constantly confronted with the question of cost of capital and it obviously plays a significant role in choices that people make. The real interest rates historically in this country have been around 2 to 3 percent. In 1985, I guess they peaked at 7 percent. They are now hovering around 4 percent. But very significantly above that of most of the industrialized competitor nations we are competing with.

The question in your testimony on page 4 you talked about expectations of inflation and future price behavior affecting the nominal rates. My question to you is why are the real rates so high and what can we do to adjust to what most business people say is the critical component of their competitive capacity?

Mr. GREENSPAN. There are basically two reasons. One is—and this is the most fundamental—our domestic savings rate is very low and the consequence of that is that the balance between the supply and demand for domestic savings and investment requires real interest rates to rise to bring forth the amount of savings necessary for investment.

Second, our inflation rate has been higher, and when an inflation rate is higher, you get a degree of instability perceived in the economy, and hence you get a risk premium, an instability risk premium, which adds to the real rate of interest. Most see the problem with respect to inflation rates usually affecting nominal rates of interest, but it's important to understand they also affect real rates.

So a combination of inadequate savings and an inflation rate which is higher than some of our competitors I think explains a goodly part of that difference. That clearly suggests that the major policy area which has to be addressed is our Federal budget deficit, which is perhaps the most useful and expeditious way to bring up our domestic savings rate and hopefully, as a consequence, a decline in our real cost of capital.

Senator KERRY. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much.

Senator Sarbanes and then Senator Sanford.

Senator SARBANES. Thank you, Mr. Chairman.

First, let me just follow along the previous discussion. I take it that you see the quickest way to improve the savings front is in the public sector to reduce the public deficit, is that correct?

Mr. GREENSPAN. That's correct.

Senator SARBANES. Would I take it from that that you would oppose any measures "designed" in some way or other to encourage savings and investment whose initial impact would be to increase the public deficit.

Mr. GREENSPAN. It depends on what the time frame is because remember our problem of low savings really is a longer-term issue

and I would want to look at the longer-term consequences of a proposal with respect to savings.

Senator SARBANES. So you would countenance I take it then from that answer an increase in the deficit in the short run if you thought it was going to bring a long-run increase in savings. Is that correct?

Mr. GREENSPAN. Theoretically, the answer is yes, but I must say to you that I find that that is probably unlikely unless one had some extraordinary assurance that the situation would turn around. But the answer in principle is yes.

Senator SARBANES. Let me come back then to the question. Do I take it then from that answer that in effect your response to the first question is that you would not countenance measures that would increase the deficit, given the difficulty of making the longer-run prediction which you've just asserted?

Mr. GREENSPAN. Yes. I would say I would certainly look at them, but I would have to look skeptically.

Senator SARBANES. So any of these proposals that come along and are designed to "raise savings" and improve that concern, if its initial impact is to add to the deficit, you would be skeptical about it?

Mr. GREENSPAN. Well, let me be very specific, Senator. The up-front cost is known for certain. The savings effect is known with less certainty. And when you match certainty against less certainty, the burden of proof is on those who argue that it has a significant positive effect in the later years.

Senator SARBANES. How serious and of how much concern should it be that we are running these large trade deficits year to year?

Mr. GREENSPAN. I think it's a long-term concern in the context of the current account deficit, which as you know is related to the trade deficit, in that we are absorbing foreign savings to essentially finance our domestic investment. We can do that for a while and clearly the markets are quite favorably disposed to investing in the United States and we are not having difficulty in any measurable manner of obtaining foreign savings to finance our domestic investment, but I don't think that we should rely on that fact indefinitely into the future. That is one of the reasons I have argued for a significant reduction, hopefully even a surplus, in our Federal accounts so that we basically can remove the need for the significant net drain of foreign savings to finance our domestic investment. We can supply it ourselves.

Senator SARBANES. Did you regard it as a serious development that the United States went from being a creditor nation to being a debtor nation?

Mr. GREENSPAN. Not in an important economic sense.

Senator SARBANES. How about in a political sense?

Mr. GREENSPAN. In the political sense, I think it does reflect this same problem and it symbolizes it, but we have very great trouble with the data, and there are reasons why the net debt per se is not as important an issue as the flows which it relates to. And as I indicated in my——

Senator SARBANES. Now given these flows which you've said continue to come but on which we are increasingly reliant, would you

say the United States is increasingly finding itself in the position of being dependent upon the kindness of strangers?

Mr. GREENSPAN. I would scarcely call it kindness. I think they are investing in the United States because they perceive it as a place where rates of return are good. Our laws are very favorable to the protection of property rights and we are a place where long-term investment is feasible. I think that's a plus.

Senator SARBANES. Do you feel any pressure to uphold the value of the dollar in order to assure continued foreign financing of U.S. deficits?

Mr. GREENSPAN. I don't see it directly in the markets, but I would say that as an economist I would find it hard to believe that there was no effect. I think that there is some effect on real interest rates in the United States as a consequence of our needing to drain funds from abroad.

Senator SARBANES. Isn't the Fed sensitive to that consideration?

Mr. GREENSPAN. Well, sensitive in that—if you're saying are we aware of that fact, of course we are aware of that fact.

Senator SARBANES. Well, don't you have to accommodate it to some extent?

Mr. GREENSPAN. Well, as I say in my prepared remarks, there are certain elements within the economy which monetary policy is not best suited or even approximately suited to address. The issue of our current account deficit is largely something which has to be addressed effectively from fiscal policy, not monetary policy, because it really gets to the basic imbalance of domestic investment and domestic savings.

In fact, arithmetically, our current account deficit is essentially the difference between domestic investment and domestic savings, and only if we can affect those numbers in a significant way, can we resolve this question. And that's the reason why I think the Federal budget deficit is such a crucial issue here.

Senator SARBANES. Mr. Chairman, I see my time has expired. I would just make this observation. We have the story that the trade gap has reached a 5-year low. It's still at $109 billion. It was $119 billion last year. It was $152 billion the year before. That's an improvement, but nevertheless, we still have gone in effect another $109 billion into the debtor status. I wanted to ask the chairman what he saw 5 years down the road with these kind of continued trends. It just seems to me that we are just digging ourselves in deeper and deeper. Thank you.

The CHAIRMAN. I might just make two observations at that point before yielding to Senator Sanford. One is that we changed the manner in which we calculate that data last year, we now leave off the cost of insurance and transportation. That tends to run about a billion dollars a month on a trade deficit that's running $9 to $10 billion a month. So those reported numbers look better than they really are, in my view. I think that change in the accounting system was questionable, but in terms of how much improvement year to year, we've had less improvement.

Senator SARBANES. So in other words, instead of having dropped from $152 to $109, we really dropped from $152 to $121?

The CHAIRMAN. That would be my view.

Mr. GREENSPAN. No. These numbers are consistent so that you have to add freight and insurance to both.

The CHAIRMAN. I don't dispute that. You would have to add it to the $152, but the point is you've got to add it to the $109, so that the $109 in fact isn't $109.

Mr. GREENSPAN. That's correct. In other words, I am just saying that the change is about the same but the levels are both higher.

The CHAIRMAN. Just a second point, and I want to do this briefly and I will. I want to draw Senator Sarbanes' attention to your comment down at the bottom of page 15 where you say here, "The Federal Reserve can address itself either to domestic prices or exchange rates but cannot be expected to achieve objectives for both simultaneously." That's a very powerful fact of life which you, I think, candidly put forward here. It relates importantly to this discussion, and I want to come back to it.

Senator Sanford.

Senator SANFORD. Thank you very much.

I come from a part of North Carolina that was settled by the Scots that came up the Cape Fear River. I grew up in that community and they are burdened with two considerable traits. One of them is honesty and the other one is fiscal integrity. I've had to operate in that climate most of my life.

Mr. GREENSPAN. Those are terrible burdens, Senator.

Senator SANFORD. Great burdens. And it makes me very uncomfortable here in Washington if I can't somehow find a way to address the implication of those burdens, I'm boggled by the fact that since I've been here and several years prior to that we've heard constantly year after year that the Federal deficits were being reduced, not rapidly enough but that Gramm-Rudman had a schedule. Then we rearranged the Gramm-Rudman schedule and now as I understand it we are going to rearrange it again to run until 1993. All of that time we've seen what I would consider actual deficits which I define to be the annual increase in the national debt, increasing year after year, not decreasing at all. This annual increase is now somewhere in the neighborhood of $300 billion. In fiscal year 1991's budget, according to Mr. Darman, I think it might end up at $300 billion or it might be a little bit less than that, but it is still too large a figure.

The point is that our accumulated deficits by 1993 without any doubt will be approximately $4 trillion. Interest then will be clearly the highest item in the budget. Interest now claims 40 percent of all dollars that come in from tax sources. Forty percent of the money we take in is the interest bill. While we don't pay it all out in cash, we continue to capitalize the interest and it's carried in the Federal debt.

As I struggle with this problem, let me ask you if we redefined deficit into just a straightforward definition as the annual increase in the national debt, would that cause interest rates to rise?

Mr. GREENSPAN. I think the markets are sufficiently knowledgeable, Senator, not to be affected by how we keep our books because the participants in the markets are very sophisticated. They have all the data that we have and how we rearrange it doesn't change anything. So we are not going to change any level of interest rates by how we keep our books.

Senator SANFORD. We might be fooling the public but we are not fooling the people that calculate over deficit.

Mr. GREENSPAN. We might fool ourselves but we won't fool the people who are out there in the markets.

Senator SANFORD. I was impressed with the speed with which the Fed responded to the October slump a couple years ago on the stock market. I also was pleased to see that you were monitoring the Drexel Burnham situation and its effect on the markets.

Do you think we need changes in our broker-dealer capital requirements or the regulatory structure affecting the parent firms of a holding company of broker-dealers?

Mr. GREENSPAN. Well, Senator, as you know——

Senator SANFORD. The point being that folks say, well, the junk bond mania is over now and we don't need to do anything. The question is, is there something we need to do?

Mr. GREENSPAN. Well, I think, Senator, as you know, the Securities and Exchange Commission has a bill pending in this Congress to increase the disclosure and reporting requirements of the holding companies of the securities firms and I think the first thing that one really has to understand is how some of that gets put together.

We at the Federal Reserve have very significant amounts of data on these various different types of institutions and the Federal Reserve Bank of New York has made a special effort to collect a good deal of information which I must say was very useful in understanding the various different risks involved in the Drexel bankruptcy.

I would hesitate at this stage to suggest any regulatory legislation because I don't think at this particular point that we know enough yet to make useful judgments in that regard. I would like to see the data in detail first.

Senator SANFORD. But you are in the process of gathering that data in?

Mr. GREENSPAN. Well, the actual full detail will not be available unless and until there is passage of legislation which enables the Securities and Exchange Commission to request such data of the nonbrokered dealer subsidiaries of these larger securities institutions.

Senator SANFORD. Do you know whether the RTC and the thrifts generally are still overstocked with junk bonds?

Mr. GREENSPAN. Well, I don't know what overstocked would mean. I guess at this stage anything is "over."

Senator SANFORD. That would be my definition.

Mr. GREENSPAN. Considering what's happened to the prices of a lot of these bonds I would think that the last few months have not been a very enjoyable one for those who are large holders.

But the size of total junk bonds in the system is still small. It's not a large number. There are a number of thrift institutions which have fairly large commitments to junk bonds, but it's not a huge, pervasive issue. It's more localized with a certain number of institutions than a very large problem in a large number of institutions. That it is not.

Senator SANFORD. Thank you very much.

The CHAIRMAN. I would like to follow up on what Senator Sanford said a minute ago and what I took your response to mean. I take it, that for brokerage firms such as Drexel or others, the SEC, in your view, ought to have the authority to be able to monitor the upstream affiliate activity. Is that correct?

Mr. GREENSPAN. Well, let me say this. We at the Federal Reserve Board are somewhat divided on exactly what those powers should be and I would say I personally marginally am in favor of it and would be supportive personally, but I am not speaking for the Board of Governors.

The CHAIRMAN. I appreciate the distinction.

Mr. GREENSPAN. I would be personally in favor of the legislation which has been brought to the Congress.

The CHAIRMAN. I think that's an important statement from an important person who brings a lot of knowledge and insight to that subject. I had the same concerns that Senator Sanford has expressed. We have the Chairman of the SEC coming in on March 2 to discuss that precise issue here, so we will have some chance to pursue it then. But I think we do need to know more about what's going on in the affiliate area, and we may find that that's particularly relevant in the Drexel case that we are in the middle of now. We'll see.

Senator SANFORD. Mr. Chairman, I want to excuse myself. I've got a 12 o'clock appointment and I thank again Mr. Greenspan.

The CHAIRMAN. Let me just also ask while we are on that subject, Mr. Greenspan, do you agree with the risk assessment provisions of the market reform bill?

Mr. GREENSPAN. I'm not familiar with what exactly you're referring to.

The CHAIRMAN. Let me ask you to take a look at those provisions if you would. There are some risk assessment provisions that are laid out in that bill, and I would think that they would be something that you would find useful for us to have. I'd like for you to just take a look and respond for the record if you would. In effect, they would give the SEC the authority to obtain information of the finances of holding companies and affiliates. Take a look at it, and let us have a response. I think it's timely.

[Chairman Greenspan subsequently responded to Chairman Riegle's request in his answer (4) to written questions that Chairman Riegle sent in his letter of March 13.]

The CHAIRMAN. I've asked the staff, just in the last few minutes, to go out and try to determine how much of U.S. Government debt instruments are now held by foreigners. In other words, what is the extent to which we are tapping into this international pool of lendable money to finance deficits here in the United States.

This is the series of data that I've been given coming forward from 1984. It's gone up very substantially. In 1984, the data that I've been given indicates that $193 billion would have been outstanding in the hands of foreign lenders. In 1985, that went up to $225 billion; in 1986, $263 billion; 1987, $300 billion—I'm rounding off here to the nearest billion—in 1988, $362 billion; in 1989, $394 billion, and that was through September. That was the number through the month of September, so it would have been higher, one assumes, by year end, though not necessarily certainly so.

In any event, it looks as if what we have done here in a period of 5 years is that we have doubled the amount of foreign holdings of U.S. Government debt instruments going up from roughly $193 billion in 1984 to $394 billion through September 1989.

Can we continue to do this indefinitely, do you think? Are the foreigners going to continue inexorably to take on larger and larger amounts of U.S. debt? Can we safely make that assumption? Obviously it relates to what the price is. If the interest rate and the expectation on exchange rates is such that our debt instruments don't look as attractive as some other country's, then presumably it gets harder to sell. You may be able to sell it, but at a higher rate.

But setting aside for the moment the question of what rates you have to offer to attract the foreign capital, are we likely to see that trend continue? Are we likely, say over the next 5 years, to see the amount of U.S. Government debt in the hands of foreign lenders double again?

Mr. GREENSPAN. I don't know if it will double, Mr. Chairman, but what we are looking at is a process which, as I indicated in my prepared testimony, is a globalization of the financial systems in the sense that we in the United States are investing more monies abroad, people abroad are investing more moneys here, and the process is grossing up in the sense that the ratio of foreign holders to domestic holders of financial instruments I believe is probably rising in every major industrial country. That is, in a sense, an indication of the increasing globalization.

In that sense, I would expect that the ratio of our total financial instruments in the United States held by foreigners will continue to increase. Whether it increases at the pace of the most recent period, I really don't know, but that is part of the process that is going to go on and, in my judgment, irreversibly.

We will find, for example, that there will be American holders of assets abroad whose foreign assets are rising as a share of their total assets as well. I think it's important to look at the total process, this grossing up of global commitments to get a better understanding of what the flows are. But I think the crucial point that you raise, Mr. Chairman, is the issue of when the net savings flows begin to become difficult to finance. In short, can we in effect continue to attract foreigners net on balance here—that sort of nets out the pluses and the minuses—and that's an issue which I think is going to confront us over the years ahead.

The CHAIRMAN. Do we even have the luxury of being confronted by it in the years ahead? Aren't we in effect being confronted with it, in part, now?

Mr. GREENSPAN. I am not sure how significant the current flurry in interest rates is. We know that there is this big investment hole in Eastern Europe. There is an extraordinary possibility here for a major expansion, largely in investments into these countries to export back out into the hard currency nations. It's not selling to the individuals but it's using the infrastructure, which is a lower cost infrastructure, to ship goods out, so there are potential significant rates of return.

What we are seeing is a general awareness of this process and that's why I think we saw the rise in long-term rates throughout the world.

What we don't know is whether or not that potential out there is yet fully discounted in the market because if it is, then the interest rate rise is enough. If they have overdone it, there will be a partial retracement and if there's still an excess of expectations of investment opportunities versus savings, then rates could go up more. We don't know enough at this stage to basically make that judgment, but to merely project those rates straight up I'm sure is not correct. The process is much more sophisticated and much more complex than a simple market extrapolation. This is an extraordinary change in the nature of world savings and investment which I don't think has any historic precedent exactly in this form, certainly not in the last 40 years.

The CHAIRMAN. Well, I think this is a crucial subject for us to discuss here today a little bit further. As Eastern Europe tries to come fully into the industrialized 20th century and head into the 21st century, they appear to have enormous capital requirements to get into the game—decades to make up for. Is the world's savings pool, as we now see it, going to be sufficient to finance their catch-up, as enormous as it is? We're still dipping into that international savings pool to take out the large share of borrowed money for our huge deficit needs to finance a lot of our present consumption. Is the world's saving pool going to be sufficient to handle all of these credit needs, given the fact that we've just gotten an entire new batch of major capital investment credit needs presented?

Mr. GREENSPAN. Also remember, Mr. Chairman, as these countries begin to move their economies and incomes up, they too will begin to generate a significant amount of savings for their own purposes. So it's precisely the answer to that question which you raise which has led the markets to grope for an equilibrium to get a sense of where the balance is. It is the most important financial issue of the decade. It's happening very quickly. If the various changes in Central Europe and Eastern Europe had occurred over a period of years, it would be one thing, but they are all happening at approximately the same time and this is a very large, skilled, educated population whose underlying basic needs—let me put it this way—whose potential for growth is really extraordinary. It is that which has led to the interest of pools of world savings looking to Eastern Europe as a potential source of significant rates of return.

The CHAIRMAN. And there are more reasons than just the economic returns. Again, referring to President Havel's comments yesterday, and I thought he was as eloquent as words could be——

Mr. GREENSPAN. It really was extraordinary.

The CHAIRMAN. I suspect that because of the phenomenal size and nature of this new condition and new opportunity, there will not be much of a savings rate in Eastern Europe any time soon. I think Eastern Europe is going to eat capital and, for a while, not be able to produce much in the way of savings because you not only have an industrial base to build—a private sector production base to get into place and with modern roads and a lot of other things that go with it—but you've got a consumer group that

doesn't really have very much. Things like acquiring cars or washing machines or housing or things of that kind will consume any income over and above what it takes to live each day.

If that is generally so, I don't see how the United States with its financial balances so out of order—our fiscal deficits out of order, masked by the Social Security surplus transfers, our trade deficit very substantially out of order, our savings rate still very anemic—is going to be able to go out and grab the same share out of the international savings pool without having to bid a higher price for it.

I think that's some of what's happened just in the last couple of months. I think as interest rates have gone up around the world, they've helped pull our rates up. I am not sure you would have wanted to see our rates go higher if we could have disconnected from foreign influences and kept them lower. I think they've been pulled up because world rates have gone up. Do you disagree with that?

Mr. GREENSPAN. I basically agree with the thrust of what you're saying, Mr. Chairman. I wish to add one caveat, however. The point of view which you hold, which I think is a rather sophisticated view of the way the process is emerging, is also what the market is looking at. And what I said before and would like to reiterate is that you're explaining why interest rates have moved up and why they are where they are.

We have to distinguish between market adjustments which happen fairly quickly as soon as knowledge is absorbable. I think it's becoming fairly clear that the opportunities in Eastern Europe are very significant and that there is likely to be a shortfall certainly in their domestic savings which requires for a time a significant amount of foreign investment and savings to move in.

That, other things equal, would tend to raise the level of real interest rates, long-term real interest rates, throughout the world and indeed it probably has. That's what we are looking at. But we cannot go from there to say that because of the imbalance between Central Europe's savings and investment that therefore rates will go higher from here because what causes that to occur is a revision of the judgment—in effect, pretty much the judgment that you have made, because it's not clear at this stage whether in fact the markets have moved rates to balance a long-term view of savings and investment flows in Eastern Europe.

The only thing you can basically say is that that process is going on but what you cannot say is whether or not the increase in rates has now fully discounted a series of forecasts into the future. We don't know the answer to that. In fact it's one of the extraordinary things about markets. Because we don't know how to do it, the market flows are the best way to allow that process to work in the most efficient manner.

The CHAIRMAN. That's very helpful. Now I want to take and try to cross-connect that to another part of your testimony which comes on page 9.

At about in the middle of the page, in discussing the forecast of economic activity just ahead of us, you say, "However, available indicators of near-term economic performance suggests that the weakest point may have passed." Now I realize every word is

chosen and there are nuances built on nuances to try to create a statement that is as precisely ambiguous as it can be and still sort of convey what you want to convey.

If interest rates rise abroad because of external events—Eastern Europe being one of them, but also internal factors in Japan that have driven up their rates, what may be going on in Germany obviously connected to Eastern Europe more directly driving up rates there, and internal inflationary pressures and other things going on in those countries—and there was an effect on us, partly because we are so now reliant on all this foreign borrowing, that pulled our rate level up as well, it may be that, in macroeconomic terms, rates in our own society could become higher than we would like because we're trying to engineer a soft landing or some increase in real growth in this country. It seems to me that we could find ourselves in a situation, and we may very well be in a situation where international events pull interest rates up at a time when we don't want rates any higher here because of the impact on housing, car sales, and lots of other things that are interest rate sensitive.

It strikes me that we could find ourselves in a situation where external events, because of our reliance on this foreign borrowing, can pull our interest rate structure up at a time that's very inopportune. No matter how masterfully someone tries to engineer monetary policy—you or someone else—you may not be able to get your interest rate patterns in your own national economy where you want them in the right time sequence because you are now part of this world economic system.

I think I'm seeing more of these jolts hitting us, and I'm increasingly concerned about it. It doesn't take away anything from your ability to try to navigate this because I think the job is in the best possible hands, but I think the job can become unworkable at some point with these factors now upon us.

I'd like you to react to that.

Mr. GREENSPAN. First, let me say that the type of issue that you are raising doesn't necessarily relate to whether we are in surplus or deficit because if in the world context we all of a sudden, as we have done in Eastern Europe, create a significant increase in real investment opportunities, profitable opportunities, while the global supply of savings remains unchanged, then real interest rates have to rise, and they will rise all over the world, and they will rise whether or not you are a surplus country or you are a deficit country. It's got to do basically with the process. The issue of our savings problems is a somewhat different issue and separate from this.

But the key question here is whether or not we get to a state where all of a sudden the prospective demand is so huge that interest rates begin to rise extraordinarily.

The CHAIRMAN. You do though, express concern in your own statement about the buildup of these debt levels.

Mr. GREENSPAN. That's correct.

The CHAIRMAN. So you've also got the problem of servicing all of this debt perhaps at a higher interest rate, which then can run into structural problems in the United States, which is a new kind of danger for us.

Mr. GREENSPAN. I don't deny that those dangers do exist. In fact, it's part of the issue of the greater complexity of monetary policy in this type of globalized financial world. The Eastern Europe issue is a special case of that because it's a discontinuity. It's not something which has happened smoothly and which the markets could adjust to gradually. It happened in an extraordinary short time and, leaving the economics aside, it's such a magnificent thing to happen to the world—I mean we can scarcely argue that this is a problem.

But the reason I am not concerned at this stage in the terms in which you spell out the problem is that, first, I think that there is a very general knowledge of the size of the potential investment and I would suspect that most of the information about that is already in the markets and, hence, unless something fundamentally new occurs to create a major new investment opportunity—and I can't see where that's coming from—I'm not as concerned as you are that interest rates will just continue up.

Also, remember that if interest rates start up, that in turn will lower the desire to make a lot of those investments, and very small changes in rates are probably enough in this context to essentially stretch out prospects for a significant investment in Eastern Europe.

In that sense we are looking at one of the great advantages of having open markets, free capital flows, and the ability of goods, services, and capital and finance to move in the manner in which they are moving. The adjustments are happening in a way which I think significantly delimits the types of risks which you raise, Mr. Chairman.

Having said that, I'm not saying that I am unconcerned about this process. Obviously, the very difficulties that one sees out there impact upon the way we at the Federal Reserve do our job so we have to be very sensitive to what's going on and we audit it in a very detailed way. I find myself being far more interested in what's going on on a 24-hour basis than I would ordinarily because this is a particularly crucial period.

But I cannot say that I am concerned in the sense you are because I think most of this knowledge, most of these expectations, most of the underlying changes that are about to happen have already affected markets. And to the extent that is the case, I don't think we can realistically argue that interest rates in the world markets in real terms are going to go up, go down, or stay unchanged.

The CHAIRMAN. Let's get the budget chairman into this. Senator Sasser.

Senator SASSER. Thank you very much, Mr. Chairman.

Chairman Greenspan, I apologize for missing your opening statement today. We had hearings before the Budget Committee, but I will read your statement with great interest as I always do.

Mr. GREENSPAN. Thank you.

Senator SASSER. I am pleased to see you and I came to ask this question.

I note that you and several of the Federal Reserve Bank presidents have endorsed the resolution of Congressman Neal that

would require the Federal Reserve to bring inflation down to zero within a space of 5 years.

Now I'm wondering if you have fully considered all the consequences of this initiative. I have seen a study done by the Congressional Research Service using Data Resources econometric model which show that the economic effects of a 5-year transition to zero inflation would be ready catastrophic.

It's theoretically possible to get to zero inflation by 1995 but when you look and see what happens along the way it's not a very appealing path to follow. According to Data Resources, interest rates would hit 16.9 percent in 1992, 15.8 percent in 1993, the budget deficit would be $663 billion in 1993, increasing to $691 billion in 1996. The unemployment rate in 1993 would be 11.9 percent, 10.7 percent in 1994. We haven't seen unemployment rates like that since what some would call the Volker recession of 1982.

In addition, we would have 4 straight years of negative real GNP growth and of course we've still got the thrift industry hanging out there and we've seen what happens to them when interest rates get up in the 14, 15, 16 percent range.

Now I am confident, Mr. Chairman, that you can give me 100 different reasons why Data Resources is wrong, but I just want to stress today that I see a great danger in an all-out single-minded attack on inflation.

I think that we've got to be concerned about the underlying economy, about employment, about economic growth, and I wouldn't want you to leave here today thinking that this resolution that's been introduced over in the other body has a groundswell of support here in the Congress because this is one Senator who does not support it at all. In fact, I think it would be cataclysmic if it came to pass.

Now I've had my turn. What do you say about DRI's projections?

Mr. GREENSPAN. Let me first raise two issues, Senator. First, the Neal resolution does not require zero inflation. In fact, in its original version it did and it required a very specific one percentage decline per year in the CPI. I told the Chairman over there that that was not a desirable way to come at that.

The legislation that I would be supportive of stipulates that the economy is to be brought down to a noninflationary level and that we define stable prices as that rate of inflation which is sufficiently de mininis that it does not enter into the business decisions of people. In other words, for example, if the inflation rate were 1.5 percent or maybe even somewhat higher, our historical experience suggests to us that that is, in fact, the equivalent of zero in that it has all the benefits of zero inflation since it does not create distortions, which is one of the major reasons why we are in favor of stable prices.

Second, we obviously have done very much the same sort of analysis of what a decline in the inflation rate would do with respect to employment/unemployment, and all I can say to you is that we do not come out anywhere near where the DRI model comes out.

Let me suggest to you one of the problems that using a straight, untended econometric model—and that is essentially what is being done in these examples—if you take any of these models, ours included which contain elaborate, very complex sets of equations

which try to capture the nature of the relationships within the American economy, and you allow them to run out a forecast untended by human judgment, meaning in an econometrician's terms you add factor the various equations and adjust them, you get silly forecasts. The results are ridiculous. In fact, if you allow the models to run over the years, they do less well in my judgment than almost trying to make a sort of non-econometric type judgment.

The same relationships which are causing that problem in the forecast are the relationships that are used to simulate these types of events. So we have the same problems as we do in forecasting in simulating how the American economy would behave if, for example, we endeavored to get the inflation rate down very gradually.

We are obviously acutely aware of the difference between econometric simulations, forecasts and behavior in the real world. And while it is the view of myself and my colleagues that there are very great values to the American economy in getting the inflation rate down—and in my prepared remarks I discuss some of them—we are obviously aware of the structural dangers to the whole policy if in the process we create inadvertently a major economic downturn. As I say in my remarks, our basic purpose is to bring the inflation rate down without a recession and that is our basic view and I think that we do not have a mechanical step-by-step program out there because we don't believe that one is feasible, but we are biased towards bringing the inflation rate down in a context which does not upset the economy.

Senator SASSER. Well, I just want to make it clear, Mr. Chairman, for the record that I don't think we can sacrifice everything along the way in our fight against inflation. I had a great number of running discussions with your predecessor over a period of years about his attacks on inflation and made the point to him that we didn't have any inflation in 1933 and 1934 as I recall, but nobody had any money and nobody had any jobs.

We had disinflation at that time and frankly I think we are still paying the price for some of the policies of the early 1980's and late 1970's in monetary policy. We are still paying it here in this committee with the problem with the savings and loans. One of the prices we paid for shaking inflation out of this economy or bringing inflation under control was what occurred in the thrift industry and it's going to cost the taxpayers of this country somewhere in the neighborhood—who knows—of $150 to $200 billion over a period of years to resolve the problems of this industry.

Of course that pales to insignificance when we realize what happened to GNP during that period and how much real economic gain was lost. Perhaps we had to pay it to wring inflation out of the economy. But there are some around here—and I guess I include myself in that category—who are willing to absorb a modest amount of inflation to keep this economy healthy and moving and growing. I suppose I almost find myself in agreement with the Secretary of HUD, Mr. Kemp, in this one regard to some extent—not on all matters economic I must say, but to some extent in this one regard.

Thank you, Mr. Chairman.

Mr. GREENSPAN. May I just comment for just one second?

The CHAIRMAN. Please.

Mr. GREENSPAN. We've had 7 years of prosperity, a growing economy, which I don't believe we could have had if we had allowed the inflationary imbalances to occur and I think the policies of my predecessor, as difficult as they were at the time—and I remember the extraordinary turmoil that was created at that time—in retrospect, I think were necessary. I think we're fortunate in that it diverted an economy where inflation looked as though it were not only high but accelerating. I think the fact that the argument we have today is whether or not a 4 or 4.5 inflation rate should be brought down is an argument I don't think we would have the luxury of having were not the actions taken in monetary policy in the early 1980's. I am willing to stipulate all of the problems that you argue in favor of, Senator, but I do think if one balances benefits against costs, the advantages in retrospect of those policies I think were extraordinarily helpful to this country.

The CHAIRMAN. I want to pursue this just a little bit longer. We don't get a chance to have a serious discussion this way when we're working with the 5-minute question periods. They interrupt any kind of follow-through on some of these issues that are raised.

I want to come back one more time to what we were chatting about a little earlier, and it relates to what Senator Sasser has just been saying as well.

I gave you a series of data earlier on the amount of U.S. debt instruments that are outstanding and held by foreigners.

Mr. GREENSPAN. Those are Federal debt.

The CHAIRMAN. Yes, just Federal debt. And I gave the dollar figures and how it had doubled over a 6-year period. It has also gone up in percentage terms and I want to say that for the financial press here as well. It's gone up from roughly 15 percent of the total in December of 1984 to about 20 percent of the total in September 1989. The trendline would imply that we will be requiring foreigners to take on a larger percentage as well as a larger number of dollars of debt holding simply because we can't finance it ourselves. We can't restrain ourselves, so they have come forward to pick it up, at some rate of interest.

The world has changed, and I think you've captured it very well today in terms of the extraordinary dimensions of what has happened with the collapse of communism as an economic and social system, the Berlin wall coming down, and noncommunist heads of states coming to visit us from Poland and Czechoslovakia and other places. Clearly, it is an extraordinarily changed situation. However, the United States, I think, still has some very serious underlying structural economic problems of its own. They now have to be integrated and dealt with within this world economic system that has just now been jolted by these new changes.

If you take our persistent fiscal deficits, our persistent trade deficits, our persistently low savings rate, the fact that the Japanese last year invested in their private sector five times the amount of equity capital that we did here in America in companies, the fact that we have been replacing equity with debt in the United States with leveraged buyouts and junk bonds and other instruments which you yourself expressed a concern about a little bit earlier, you can see a lot of things that are fundamental imbalances and

trendlines that are not helpful to us over a period of time and that we are having a very difficult time changing very much. And we've invented terms of debate and devices I think to sidestep a lot of these questions and roll them forward and not deal with them.

My concern is this. There is still the view in the country, I think, that somehow monetary policy is the last resort way in which we can work things out in an orderly way, that if the Fed is just competent and up to the task, they can somehow pull the levers this way or that way and reconcile everything and keep us going with this 7-year expansion, avoiding the pitfalls of inflation on the one hand or high unemployment on the other hand, or of interest rates going through the roof.

I must tell you that I think we are putting ourselves in an economic trap. I think the time is coming and it may be here now where interest rates other places, because of macroeconomic factors in Japan, in Europe, in West Germany, or in other places may now impinge in new ways on our ability to continue to draw savings out of the international savings pool to deal with a lot of our problems and excesses.

Rates have started to go up. You say you can't necessarily extrapolate that they will go higher. They may stay the same; who knows where they will go. But I know what I'm hearing from business leaders who come to see me—you see a lot of them as well. There's a growing concern about the economy, about the effect of these things on interest rates, and on the ability to have a strong growth going forward. I'm hearing it more frequently. Maybe they are all wrong, but they are expressing that concern.

When you say on page 9, "available indicators of near-term economic performance suggest that the weakest point may have passed," given the fact that it's a hedged statement, what can we really hang our hats on there to sustain that notion?

Mr. GREENSPAN. Well, Senator, let me say first that when you go back in the American economy to the summer of 1989 and you look forward, what you see is a continuous erosion of economic growth. In a sense it's almost like a tire with a slow leak in it. You can actually see the system going down, and down, and down and finally for the first time in the last number of weeks we are beginning to see that that deterioration has stopped.

Now I'm not saying that it won't proceed again and obviously it can. What I'm saying is that when you look at the various balance of forces going on and you look at the pattern of inventories and the like, what you get is a clear indication that something is in the process of changing.

Now I say that the probability that we are passing this weak point is somewhat better than 50–50. It is not certainty. I regret too often that when we say that something is likely to occur, the word gets changed to "will" and there is a very big difference. If you look at the blue chip forecasts of American economy, the 50 or so odd people, only one of them has got the economy going down in 1990. Now I'd like to believe that that's true. I am not sure it's basically true. It is the most probable forecast. But the mere fact that, say, 49 out of 50 say it's true doesn't make it so.

What we are looking at is a very complex set of forces, but there is no question that there has been a subtle change going on and the

change does not mean that we're about to take off again. It used to be in periods of recession where we'd have major inventory liquidation you could pretty well forecast the spike going up the other direction. We are looking at something quite different at this particular stage, but the quality of the data that we are looking at has changed.

How significant that is and how far one projects that into the future depends on one's view of the way the structure is developing. I am, as I indicated in my prepared remarks, concerned about declining profit margins. I am concerned about the strains in the balance sheet. These are potential negatives and they could turn us down again. I think the odds of that happening are less than 50–50. In other words, I didn't believe that 6 months ago. Six months ago I thought it was touch and go very honestly and I think that what has changed in my view is that the time frame when the most likely cumulative effect of the recession was to occur was probably in the fall, if you look at history the way things develop. The fact that we've come through that and now look as though there is some at least stability in that the leak at least has stopped, gives me some hope that this process may be developing.

If we get an unexpected shock from somewhere that could tilt us in another direction. And I think it is important to draw the distinction, as indeed I think all of the forecasting economists who we look at do, the vast majority think that we're undergoing sort of modest, relatively slow growth through the rest of the year, which is another way of saying that they believe it's better than 50–50 that that's what's going to happen. When you examine them in great detail about their degree of certainty, there are going to be very few who are going to say that and I think correctly so. I mean this is a very unusual type of period. But I think that while there are a number of difficulties and problems out there, I'd say the outlook in the context of what we've been going through in the last 9 months is better now than it was 3 or 4 months ago.

The CHAIRMAN. Well, I appreciate the time and the effort that you make to try to make that clear, and I know it's not easy to do.

Let me ask you this question. If external events were to have the effect of pulling interest rates up, I'm talking about worldwide interest rates, in a way that were to pull our country's rates up another percentage point so that instead of being somewhere between 8 and 8.5 or 8.6 percent from short-term borrowing out to 30-year borrowing, we saw events over a period of weeks or 3 or 4 months yank rates up, say, generally a fully percentage point to the 9 percent range, would that kind of a change create a difficulty in terms of how our economy might function at that point? Do we have enough slack that if we got pushed up into a higher interest rate environment, we could digest that rather reasonably, or are we at the point where something that would be in that magnitude would really start to change the expectations?

Mr. GREENSPAN. Well, I think that were we to get that—and in my view I frankly suspect we will not—it probably would be reflective of the fact that actual capital investment in Europe was now really moving forward, which probably would mean that our exports would begin to start to move. It's difficult to know whether the clear negative effects from high interest rates here would be

more or less than the positive effect on aggregate demand which would come as a consequence of much stronger export market than we even have today.

I don't think one can or should look at an economy in terms of what would happen if one variable would change. It almost never happens that way. There's usually a complex of forces. I would say in the realm of forecasting there's certainly enough slack in anybody's relationships to absorb a lot of changes without fundamentally changing one's outlook, but I do think that we are looking at something which we have to be careful we don't misread, and it's fortunate that we've got the resources that we have got at the Federal Reserve to look at this in great detail and have access to a great deal of material.

It's times like this when I think one really appreciates the ability of the research operation that the system has in the regional banks as well as at the Board itself because we do have the resources to look at this in a way which is important.

The CHAIRMAN. Let me just conclude with this thought. The business people I have been talking to say if interest rates pull up another notch, that could start the slow leak again in the economy. I'm getting from most business people that I talk to a belief that any appreciably higher level of interest rates would start to cut against the economy and would start to put us back in a more vulnerable position. That doesn't mean they are right, but that's what I'm hearing a lot of.

I'd like to make a suggestion to you and I don't know what you have in the way of machinery at the Fed. We can talk about this after today as well. We are all so busy doing day-to-day work. You talked about having to look at things now 24 hours a day because of the importance and the immediacy of things, and that's true here as well.

I think it would be good if somebody in the Fed could be given the task to take a 60- or a 90-day period of time and detach enough from the day-to-day work that has to be done to really think through the question of how the world has changed. I don't mean just Eastern Europe. I'm talking about all of these trends in savings rates, exchange rates, trade balances, fiscal deficits, and the new requirements for capital in Eastern Europe. What are the underlying adjustments that the United States needs to make for itself?

I think it would be very healthy at some point if the Federal Reserve, quite apart from its monetary responsibility, day in and day out, could, as a separate study or analysis, say as best it could: "The world has changed in these ways, and these are some of the key trendlines and the combination of trendlines that are creating a more complicated situation. They limit our latitude in the future—not just the Fed's latitude, but the country's latitude." We need to understand the nature of how all of these changes are working and try to think them through and get some kind of a more serious national discussion going on the economic and financial adjustments that must be made here before you wake up some day and find that your hands are tied and that you don't have the operating latitude that you'd like to have at the Fed or that we in

the Congress, or for that matter that even the President, would like.

I think there is a need for a comprehensive assessment of this changed economic and financial situation—done at arm's length, competently, dispassionately—that tries to lay this out in a way that doesn't just come back to saying we have to knock interest rates up or down in the next 10 minutes because of the impact of these things and because of the way the markets work.

I don't know if you can do something like that, if something like that is being done. I would like to suggest that something like that be done.

Mr. GREENSPAN. Well, Mr. Chairman, I hope we do that as an ongoing process because I don't see how we can in fact do our job unless we have at least tentative answers to the questions that you have raised.

But what I will do is I will go back and I will sit with my colleagues and see whether or not there is the capability in a useful manner of doing a certain specific type of study and we will be back with you to let you know whether we think that it's feasible or desirable or what form you might think the resolution of that problem which you, I think very appropriately raised—what from that might take.

The CHAIRMAN. I appreciate that. I've got other questions I am going to submit for the record, some from Senator Kerry, some from myself. You've been very patient and I appreciate very much your testimony.

Mr. GREENSPAN. Thank you very much.

The CHAIRMAN. The committee stands in recess.

[Whereupon, at 12:50 p.m., the hearing was adjourned.]

[Response to written questions follows:]

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

ALAN GREENSPAN
CHAIRMAN

April 17, 1990

The Honorable Donald W. Riegle, Jr.
Chairman
Committee on Banking, Housing, and
Urban Affairs
United States Senate
Washington, D.C. 20510

Dear Senator:

I am enclosing responses to your questions following my testimony on the Federal Reserve's Monetary Policy Report at the Committee's hearing on February 22, 1990.

Please let me know if I can be of further assistance.

Sincerely,

Enclosures

Chairman Greenspan subsequently submitted the following in response to written questions from Chairman Donald W. Riegle, Jr., in connection with the hearing held on February 22, 1990.

Q. 1. The Economic Report of the President indicates a probable inconsistency between your money growth targets and the Administration's GNP forecast. In the past, when we have discussed such differences, you have emphasized that they have different budget deficit assumptions. Is that the case this year, and, if so, what are your budget estimates?

A. 1. There is no common budget assumption embedded in the FOMC forecasts included in the Board's monetary policy report. Because those forecasts related to the current calendar year, only a small portion of which runs beyond fiscal 1990, I think it is safe to say that the FOMC members have taken the existing budget largely as given. Perhaps the most important questions would be how the budget process for FY 1991 will unfold in the coming months, and in particular, whether one can foresee an agreement on a multi-year deficit-reduction program that could affect in a significant and positive way the prevailing expectations in financial markets. It is my sense that my colleagues have not built such a development into their thinking--though we'd certainly all welcome it.

Q. 2. Last year's economic growth rate was only 2.4 percent, despite a major boost in farm output after the 1988 drought. This year you project growth of less than 2 percent. In your testimony, you said that to reduce inflation we need slow growth until we develop some "slack" in the economy. Can you give us a rough estimate of what that might mean in terms of unemployment rates?

A. 2. As I've indicated on a number of occasions, I don't think conventional econometric estimates give reliable guidance on the short-run relation between unemployment and inflation. The particular circumstances, and how expectations change as anti-inflationary policies are implemented, would be important in determining this "trade-off." The central tendency of the FOMC forecasts suggests that most members are of the view that some progress toward lower CPI inflation can be achieved this year without a sizable rise in the unemployment rate.

Q. 3. In the junk bond market, we have been witnessing a long degeneration of prices and market conditions, as a number of large mergers and LBO's have faltered. Some institutions have failed already as a result. How much future damage do you foresee? What are the implications for banks with large portfolios of LBO loans? What are the implications of Drexel's bankruptcy for "too big to fail" policies?

A. 3. As I stressed in my testimony, the increase in debt leverage could have significant adverse implications for the long-run viability of the expansion, and serve to intensify adjustment problems should the economy fall into recession. However, in the present circumstances, it appears unlikely that the increased leverage within the economy would itself precipitate a downturn in the economy.

With regard to those banks with large portfolios of LBO loans, we remain concerned about the quality of those credits and the extent to which recessionary factors may undermine original underwriting standards and projections. Certainly any transaction characterized by high debt levels and a low equity cushion weakens the borrower's ability to withstand financial adversity, increasing the level of risk in bank portfolios.

As of December 31, 1989, the 50 largest bank holding companies had total Highly Leveraged Transactions (HLT's) of $125.5 billion, a 50 percent increase from the level reported at the end of 1988. While HLT nonaccruals as a percent of total HLT's were less than half the rate reported by the top 50 companies for nonperforming assets overall at year-end, that figure is on the rise. We are currently conducting specialized examinations in certain institutions with relatively high concentrations of HLT's to determine if significant deterioration is taking place.

It is important to note however, that the preponderance of HLT outstandings is comprised of secured, senior debt. In essence, these transactions represent asset backed financings. As in any financing secured by real property, there are risks that cash flows generated by the assets will decline or not meet original expectations, hence the values of the underlying assets may suffer a significant loss of market value. Nevertheless, secured bank creditors would not be subjected to the much larger risks associated with unsecured high yield and equity types of financing.

The implications of Drexel's bankruptcy are most profound with regard to the loss of liquidity in the secondary market for high yield issues. The loss of liquidity will directly affect the ability of highly leveraged companies to refinance their own obligations, and may indirectly affect their ability to sell assets to meet debt servicing obligations, as potential buyers in the past have often relied upon the high yield market to finance such deals. Certainly to the extent original debt servicing agreements relied upon the availability of such financing, all participants, including senior debt holders, will experience problems.

With respect to "too big to fail" policies, the Federal Reserve has not been comfortable with the notion that the Government should insulate certain very large institutions from the consequences of bad banking practices and from failure simply because of the size of these institutions. Nevertheless, each resolution is reviewed both in the context of systemic risk and the overall cost to the government. Any revisions necessary to current regulatory policies regarding the handling of bank failures or the administration of the deposit insurance fund should properly await the findings of the study on deposit insurance reform required under the Financial Institution Reform, Recovery and Enforcement Act of 1989.

Q. 4. How does the recent Drexel experience affect your views on the need for the risk assessment provisions of the Market Reform bill (S. 648) that would give the SEC authority to obtain information on finances of holding companies and affiliates of securities firms?

A. 4. The experience with Drexel illustrated the possibility that problems in one area of a firm could spill over into other areas, some of which may have been fundamentally sound. The government securities affiliate, for example, seems to have been adequately capitalized, but it found counterparties pulling away when questions were raised about the health of the parent and other affiliates. As a consequence, the viability of a regulated entity was affected by developments in nonregulated parts of the firm.

This experience raises issues about the possible need for an overview of the entire company, both regulated and nonregulated entities. In my personal view, collecting information about all the different parts of the company might be helpful. The regulatory focus on the broker-dealer and government securities entities remains appropriate, but wider information about other areas of the firm might aid in anticipating problems that could adversely affect the regulated entities, enabling steps to be considered to protect their safety and soundness. To ensure that the SEC is provided with the type of information that it needs, and that at the same time the concerns regarding the collection, maintenance and confidentiality of information are met and to avoid duplication of information already collected by the banking agencies, the Federal banking agencies and the SEC should consult on the appropriate approach to collecting the information.

Q. 5. Do you think the Administration's family savings plan would increase private savings enough to offset its negative effects on future government savings caused by loss of tax revenue, so that its long-run effect on total savings would be positive?

A. 5. I don't have the basis for offering a strong view on this matter. Recent research on the IRA experience has been more encouraging than earlier work with respect to the question of whether IRAs have resulted in a net increase in household saving; the research has not eliminated all uncertainties, however, and the family savings plan possesses enough features that differ from those of IRAs that one would have to take a very careful look to judge the implications of the IRA experience.

Q. 6. In your testimony, you said that thrift assets would likely decline this year. How long do you think that will continue, and how do you see the industry evolving over the next few years?

A. 6. The decline in thrift assets will more than likely continue in the near term given the significant number of insolvent thrifts and thrifts experiencing financial difficulties. Furthermore, the higher capital standards and limitations on amounts and types of investments created under the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA) will require continued divestiture of industry assets.

Thrift assets declined nearly $100 billion, or 7 percent, in 1989, precipitated by liquidity pressures in certain larger, problem institutions requiring asset sales, and asset shrinkage among the industry generally to meet tougher capital standards imposed by FIRREA. Of the $100 billion decline in assets, $80 billion occurred in the last 6 months of the year reflecting both the reshaping of the industry towards higher capital to asset levels and liquidation of conservatorship assets. Also during the last quarter, resolutions of insolvent thrifts transferred $7 billion of thrift assets out of the industry, primarily to commercial banks.

Currently, excluding conservatorships, there are 177 unprofitable thrifts with assets of $124 billion, and 64 profitable thrifts with assets of $51 billion which have 1 percent or less tangible net worth as a percentage of assets. FIRREA establishes a 1.5 percent minimum tangible capital requirement. Undoubtedly, considerable shrinkage of assets and ultimately, liquidation of certain of these institutions, will be required.

A more certain fact is that the Resolution Trust Corporation (RTC), as of March 31, 1990, controlled 350 institutions under conservatorship programs with total assets of $163 billion. The majority of these assets will likely be passed to non-thrift acquirors through the resolution process. While the pace of future resolutions is likely to accelerate, the current timetable is unknown.

Over the next several years, our view is that the intense competition within the financial services industry to provide mortgage credit will continue, and that consolidation within the thrift industry will be dictated by the need to improve operating

efficiencies. As I discussed briefly in the testimony, the downsizing of the thrift industry which has already taken place did not affect the overall cost and availability of mortgage credit, as other suppliers of this credit stand ready to absorb an increasing share of the market. Thrifts that survive this restructuring, will have to be well managed, strongly capitalized, and profitable.

Q. 7. In a recent speech which he delivered in Tokyc, Gerald Corrigan, President of the Federal Reserve Bank of New York, commented on the rapidly growing ing share of America's banking market controlled by foreign institutions. After noting that 25 percent of the banking assets booked in the U.S. are controlled by foreign banks, with Japanese banks having 14 of the 25 percent, he asked:

"Is there a point where the extent of foreign banking presence in U.S. markets could give rise to public policy concerns about such presence?"

He then answered his own question:

"In my judgment, the candid answer to that question is yes: such concerns could arise, particularly in the context of any pattern of future behavior which might be viewed by some as an aggressive strategy of expansion through acquisition."

Do you share Mr. Corrigan's views on this issue? Please explain why or why not.

A. 7. The Federal Reserve for many years has strongly supported the policy of national treatment with respect to access of foreign banking and financial institutions to the U.S. market. I support that policy and believe it is in the best interest of U.S. consumers of banking and other financial services. The policy of national treatment contributes to a strong, competitive market in the United States. It is also the policy of the United States to encourage other countries to adopt policies of national treatment for foreign banks and financial institutions; I support that policy and believe it has been effective over the past 15 years in helping to open up foreign financial markets to U.S. investors. In my view, the broad thrust of President Corrigan's speech in Japan is fully consistent with this line of thinking and policy.

The major reason for potential concern about the share of any investor in the United States arises from the possibility that such investments might lead to an excessive concentration of economic power in the hands of one foreign investor. In the case of the banking industry, current Federal and State laws provide an adequate basis for guarding against the development of such concentrations and for dealing with their consequences if they should

develop. Therefore, although by various measures the share of Japanese and other foreign banking institutions in the U.S. banking market has risen somewhat in recent years, I see little economic significance in these trends.

I am concerned that this issue could become a matter of political concern. In particular, I am concerned that it could lead U.S. authorities to adopt protectionist measures in this area. Such measures would not be in the long-term economic interests of the United States because it would tend to provoke retaliation against U.S. investments abroad. They could also have an immediate adverse impact on the U.S. economy by putting upward pressure on interest rates at a time when the U.S. economy is heavily dependent upon a net inflow of saving from abroad to help finance needed investment in the United States. I would, of course, prefer that the profits from such investment whether in the banking or other industries accrue primarily to U.S. citizens rather than to foreign investors; however, under present circumstances, that is a luxury we cannot afford.

I know that President Corrigan shares my views on these matters.

Chairman Greenspan subsequently submitted the following in response to written questions from Senator John Kerry, in connection with the hearing held on February 22, 1990.

Q. 1. To what extent, if at all, do examinations of the Fedwire system conducted during Federal Reserve Board's annual examinations of Federal Reserve branch banks and the periodic financial reviews of specific Fed bank functions, attempt to assess the vulnerability of Fedwire to money laundering schemes?

A. 1. As a primary mechanism which depositary institutions used to process 60 million transfers, totalling $183 trillion, in 1989, we recognize that Fedwire can be used as a contributing vehicle to money laundering schemes. Because Fedwire serves only as an intermediary between senders and receivers of the payments, however, it provides no mechanism to detect any such schemes.

The detection of money laundering within a universe of normal payment activity requires the ability to identify some transactions as suspicious. Such suspicions arise out of the ability to differentiate unusual from normal patterns of behavior, given the nature of a customer's history and business. Although currency transactions are essentially two-party transactions, wire transfers generally involve four or more parties, including the customers of the sending and receiving institutions. As Fedwire serves only as the intermediary between the financial institutions, it provides no means to assess the business practices of the institutions' customers and differentiate between normal and potentially suspicious activity.

The Federal Reserve routinely cooperates with law enforcement agencies by researching specific transactions and supplying related information in response to appropriate requests related to specific investigations that originate from other sources. But Fedwire, itself, does not provide data conclusive to the origination of such investigations.

Because of these factors, Federal Reserve Examiners reviews of Fedwire are limited to assessments of the integrity of the electronic data and automated process and the reliability of the systems of internal controls.

Q. 2. To what extent, if at all, do the joint Federal Reserve, Office of the Comptroller of the Currency, FDIC audits of CHIPS (the Clearinghouse of International Payments (conducted every 18 months) attempt to assess the system's vulnerability to money laundering schemes?

A. 2. The joint examination of CHIPS by the three federal banking supervisors is intended to address safety and soundness, reliability, and data security issues. The examination reflects the same types of concerns the supervisors address in performing examinations of bank electronic data processing operations. CHIPS does not, however, provide "retail" payment services and does not process payment orders on behalf of end users; in the language of the new section 4A to the Uniform Commercial Code, CHIPS is not an originating bank, an intermediary bank, or a receiving bank. Rather, CHIPS plays a role similar to a utility that transfers payment orders between parties without maintaining accounting relationships. Consequently, the federal banking supervisors' examination of CHIPS does not focus on money laundering.

Banks provide funds transfer origination and receipt services to and maintain accounts for customers. The focus on money laundering remains with Bank Secrecy Act compliance examinations of banks.

Q. 3. I read with interest yesterday in the Washington Post of a report by the General Accounting Office on security for the wire transfer systems, including FEDWIRE.

What is the Federal Reserve doing to improve its security systems and to insure that computer hackers don't abuse the system?

A. 3. Attached is the Board's November 9, 1989, letter to the GAO commenting on the GAO's draft report on Fedwire security, as well as the February 21, 1990, testimony given by Governor Wayne D. Angell to the Subcommittee on Telecommunications and Finance of the House Committee on Energy and Commerce. The letter and statement indicate that the Fedwire system has a sound security architecture that is subject to a rigorous program of review and audit by independent Reserve Bank and Board operations review and audit groups. They also reflect the Board's commitment to maintaining the highest possible degree of security on Fedwire.

The Federal Reserve has taken immediate steps to respond to the opportunities for improvement in the implementation of the Fedwire security architecture. Almost all of the findings have been corrected and work is in progress to address fully the remaining five improvements by June 1990. In addition, increased emphasis has been placed on security in the Federal Reserve's Fedwire operations review, examination, and audit procedures. The Federal Reserve's overall data security architecture is, among other things, designed to protect against abuse by those not authorized to have access to it.

Appendix III Attachment to Senator Kerry's Question #3.

Comments From the Federal Reserve System

BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D.C. 20551

ADDRESS OFFICIAL CORRESPONDENCE TO THE BOARD

November 9, 1989

Mr. Ralph V. Carlone
Assistant Comptroller General
United States General
Accounting Office
Washington D.C. 20548

Dear Mr. Carlone:

The Board of Governors of the Federal Reserve System appreciates the opportunity to comment on the draft report of the General Accounting Office (GAO) titled Electronic Funds Transfer: Oversight of Critical Banking Systems Should Be Strengthened. To support the effort to develop a timely assessment of electronic data security on the Fedwire system, the Board has expedited its review of the GAO's draft report. Our response should be read in the context of a highly abbreviated comment period providing less than two weeks for staff analysis and Board review.

The Board's response to the portions of the GAO's report related to Fedwire is divided into four parts. First, we provide a general overview of the Fedwire data security architecture. Second, we discuss the GAO's specific findings at the four Reserve Banks visited. Third, we address the GAO's recommendation that the Federal Reserve contract to obtain external review of Fedwire security. Finally, we address the GAO's concern regarding the lack of encryption on the "backbone" communications network linking the Reserve Banks and the need for message authentication.

The Federal Reserve is strongly committed to providing the most secure electronic payments services possible. As noted in the GAO's draft report, the System has in place a comprehensive program designed to identify security requirements, develop and implement technical solutions to those requirements, and, finally, to monitor the ongoing effectiveness of security administration. We believe the security architecture for Fedwire is fundamentally sound, and

FEDERAL RESERVE SYSTEM

we also believe that the GAO's findings will further strengthen the safeguards surrounding Fedwire. The Federal Reserve's commitment to data security for Fedwire is reflected by our receptiveness to information and guidance from various sources that may help ensure excellent security. It is in this context that we welcome the GAO's suggestions for improvement to Fedwire security.

Overview of the Fedwire Data Security Architecture

The Federal Reserve System has implemented a comprehensive security architecture designed to provide secure and reliable electronic payment services. This architecture incorporates a wide range of safeguards, including physical security, controlled access to computer systems, and protection of the confidentiality and integrity of data. These controls apply to software implementation, computer operations, network communications, and contingency. The System establishes and documents its control standards in a Data Security Manual containing over 100 safeguards relating to these areas. The GAO's findings need to be considered in the context of the Federal Reserve's overall security architecture and program. A summary of how these controls provide a secure environment for Fedwire is provided below.

The first level of safeguard in place to protect Fedwire includes physical security that limits access to sensitive data and operations areas to those individuals who require access to perform their duties. Guards, card key access devices, and surveillance equipment are used to prevent and detect unauthorized physical access. Moreover, all employees working in sensitive areas undergo extensive background checks. Further, legal agreements with vendors provide for clearance, nondisclosure, and other appropriate security considerations. Reserve Banks have procedures for reporting, tracking, and resolving computer system problems as well as procedures for reporting suspected security violations. Each Reserve Bank has a complete audit trail for attempted breaches of access controls and the Security Administrator investigates any attempted breach. Where relevant, this information is shared among Federal Reserve Banks.

To safeguard the Fedwire system, access control software and code words identify and permit access to authorized users prior to processing any transfer of funds. The Fedwire system acknowledges successful receipt of messages between system components. To protect confidentiality of messages, transmissions between depository institutions and Reserve Banks are encrypted.

Additional controls, based on separation of duties, restrict access to sensitive data and programs. For example, each Reserve Bank maintains separate processing environments for test and critical production systems and restricts access to these systems. Extensive change control mechanisms are in place to ensure that only tested and approved application software changes are implemented in the production environment.

The GAO's interest in security extends to capacity planning and contingency processing arrangements. To ensure that adequate capacity is available, Reserve Banks develop annual automation and capacity plans that fit into a long-range planning process.

The Fedwire system also has been designed to provide for local backup of key computing and communications components. Further, to ensure that Fedwire operations continue with minimum disruption, even after a disaster, the Reserve Banks maintain several remote sites and test comprehensive contingency plans at least semi-annually. These plans include relocation of computer operations, as well as data backup procedures to ensure that databases can be reconstructed after an outage. An example of the resiliency of the Fedwire system was the ability of the Federal Reserve Bank of San Francisco to continue full payments operations following the October 17, 1989, earthquake. The Bank operated on emergency power, restored its computer systems in two and one half hours and resumed processing to meet critical nighttime deadlines, and was open and ready for Fedwire business as usual at 9:00 a.m. Eastern Time the following day. Simultaneously, the Reserve Bank's remote processing site was prepared to serve as backup in the event that critical operations could not resume in San Francisco.

A reflection of the effectiveness of regular production and emergency backup arrangements is the high reliability of the Fedwire applications and the "backbone" communications network connecting the Reserve Banks, called FRCS-80. Availability of Fedwire applications during the critical hours of 5:00 p.m. to closing was 99.60 percent for 1988 and 99.79 percent for 1989 through the third quarter. Availability of Fedwire applications for full-day operations was 99.59 percent for 1988 and 99.77 percent for 1989 through the third quarter. The backbone communications network has also performed well. In over seven years of operations, the FRCS-80 network has maintained availability in excess of 99.99 percent. Planning is also underway for the successor network.

Specific Reserve Bank Findings

The GAO has identified a number of specific control weaknesses at the four Reserve Banks where it conducted on-site reviews. In general, these Reserve Banks have either already taken corrective action with respect to these findings or plan to take corrective action in the near future. The Board disagrees with the GAO's position, however, with respect to one of its findings. The draft report indicates that there should be a complete separation of function between computer and network operators. Based on analysis of both the risk potential and emerging industry trends to automate and consolidate computer and network operations, the Board believes that combining these functions has no detrimental effect on security. A leading industry expert that was consulted by staff concurs with this assessment. Staff comments on this and certain other findings are appended to this letter.

The Board is currently taking steps to determine whether control weaknesses similar to those cited by the GAO exist at any other Reserve Banks. If such weaknesses are found at other Reserve Banks, the Board ensures that prompt corrective action will be taken.

External Review of Fedwire Security

The Federal Reserve's security program includes multiple layers of review, both internal and external. Several organizations within the System play an active role in ensuring consistent compliance with the Federal Reserve's security standards. These oversight groups include a national Security Steering Group, comprised of Reserve Bank and Board staff, the Banks' internal auditors, and the Board's Division of Federal Reserve Bank Operations. Each organization addresses a different aspect of the data security program. At the System level, the Security Steering Group manages and coordinates the development and implementation of the data security design and addresses System-level data and communications matters.

The individual Reserve Banks' internal audit staffs participate in the system development life cycle process, regularly reviewing compliance with security procedures and performing audits of operating and data processing areas. The Reserve Banks' General Auditors report directly to the Banks' boards of directors. The internal audit departments at Reserve Banks also assure that corrective actions are taken in response to recommendations made by the Board's review groups.

A critical component of the Federal Reserve's security program is review and oversight by the Board of Governors, through its staff. The Board exercises, by law, general oversight of Reserve Bank activities. To discharge this responsibility, the Board has established a highly qualified operational and technical staff that reviews the Reserve Banks' implementation of System security standards. The Board's staff is institutionally independent of the Reserve Bank management structure, reporting directly to the Board.

The Board's Division of Federal Reserve Bank Operations reviews Reserve Bank security as an integral part of several of its functions. Through its broad scope operations review of the Reserve Banks' data processing functions, the review program monitors compliance with System policies and identifies actual or potential security concerns. Separate operations reviews of the different functional areas of the Reserve Banks, such as the Fedwire funds transfer and book-entry securities transfer operations, also assess the adequacy of the controls in these functions. The Board's financial examiners also review security as an integral part of the annual financial examination process at each Reserve Bank and assess specifically the effectiveness of electronic access controls for operating systems, networks, and application and environmental software. The examiners' focus also includes a review of the adequacy of administrative and managerial controls related to data security awareness training, personal computers, and local area networks.

To augment this multi-layered data security review program, the Board believes it is useful to engage the services of a consultant from time-to-time to assist its staff in assessing security issues. In fact, the System has a history of employing outside technical assistance. The Board retains an independent accounting firm to review annually its operations review and financial examination oversight functions, including oversight of Fedwire security. We agree that the additional insight from outside parties may be helpful in identifying additional security enhancements. Accordingly, the Board will continue to seek outside expertise to enhance its Fedwire security program. We have found that such reviews are most helpful during major systems changes and will seek outside assistance when we believe that the circumstances warrant such input.

Encryption and Message Authentication

The Federal Reserve is taking steps to address the GAO's concerns regarding the risk of unauthorized disclosure and modification of Fedwire transactions during transmission between Federal Reserve Banks. To understand these actions, a brief description of the "backbone" Federal Reserve Communications System (FRCS-80) is in order.

Implemented in 1982, FRCS-80 is a high-speed, dedicated communications network connecting Reserve Banks, the Board, contingency sites, and the U.S. Treasury. FRCS-80 employs packet switching technology, which breaks messages apart during transmission and reassembles them at their destination. Both the high speed of the backbone communications network and the packet switching technology make penetration of the network difficult. Nonetheless, we believe it is important to take steps to secure the network further. Accordingly, in September 1989, the Federal Reserve issued a request for proposal to encrypt the FRCS-80 backbone network. Vendor responses are currently being reviewed and encryption will be implemented in the first half of 1990. The encryption of the FRCS-80 backbone network is in addition to the encryption of transmissions between depository institutions and Federal Reserve Banks, which currently exists.

The draft report also discusses authentication as a measure to enhance message integrity. Message authentication is a process of deriving a code based on the contents of the message and appending the code to the message for later authentication by the authorized receiver using a secret key shared with the originator. While certain features of the Fedwire network, such as the packet switching technology of the backbone network and the encryption of messages between depository institutions and Reserve Banks, protect the confidentiality of payment information and reduce the likelihood that messages could be altered, the Federal Reserve has been reviewing message authentication technology to determine how to best implement this security feature.

The Federal Reserve has determined that any message authentication technique that is adopted must be consistent with American National Standards Institute (ANSI) Standards 9.9 and 9.17. The technique must also be consistent with Treasury Directive 16-02, which requires the authentication of funds transfers transacted between the Reserve Banks and Treasury Financial Centers. Based upon an understanding with Treasury, the message authentication process currently used for funds transfers conducted with Treasury satisfies this directive. Further, the technique should be commercially available to and cost effective for the depository institutions that are part of the Fedwire network.

The Reserve Banks are testing the feasibility of implementing message authentication with technology that meets national standards, especially regarding key management, across the Fedwire environment of more than 11,000 endpoints. The feasibility of making message authentication broadly available must account for not only the large number of endpoints but also their diverse size. The majority of the endpoints connected to Fedwire are small depository institutions that are very sensitive to costs. The results and recommendations of the Federal Reserve's feasibility study will be presented to the System's senior management in January 1990. The Board is optimistic that the System's efforts will result in a viable approach to message authentication for Fedwire.

Concluding Remarks

In conclusion, the Board is sympathetic with the thrust of the GAO's recommendations and with a number of its particular findings. Most of the GAO's specific findings have been addressed or are in the process of being addressed. Further, the Board is taking steps to ensure that the conditions leading to the findings do not exist at other Reserve Banks. To enhance its Fedwire security program, the Board will continue to seek outside expertise at times when such assistance would be helpful. The FRCS-80 backbone communications network will be encrypted in the first half of 1990 and recommendations from the message authentication feasibility study will be presented to Federal Reserve senior management in January 1990.

The Board of Governors generally believes that the recommendations contained in the GAO's draft report will assist the Federal Reserve in its continuing efforts to ensure a high level of Fedwire security. We appreciate this opportunity to comment on the draft findings.

Sincerely yours,

Barbara R. Lowrey

Barbara R. Lowrey
Associate Secretary of the Board

Enclosure

ENCLOSURE

DETAILED STAFF COMMENTS ON THE DRAFT GAO REPORT - ELECTRONIC FUNDS TRANSFER: OVERSIGHT OF CRITICAL BANKING SYSTEMS SHOULD BE STRENGTHENED

The following discussion addresses areas that the staff believes require further clarification and areas with which the staff takes exception.

8. Communications Management Security Weakness: Communications personnel were performing duties normally assigned to computer operations and systems programmers.

The Federal Reserve Bank of San Francisco does not plan to separate its telecommunications and computer operations functions in the computer room. Operators do not have the ability to modify applications programs or data. The decision to combine these areas was made consistent with the System's efforts to automate computer and network operations. Discussions with an outside consultant with expertise in automated operations have confirmed that there is no additional security risk associated with combining these two functions and that the Bank's decision is consistent with emerging industry trends. However, regarding the GAO's concern about the separation of duties between operations and systems programming, the Bank will reexamine the alignment of responsibilities between these functions to eliminate any potential unauthorized access and modification to Fedwire data.

Further, to address the GAO's concern that the communications personnel had the capability to alter memory, the Bank has reassigned access so that the communications personnel no longer have access to the special password for the software that provides this function.

9. Network Management Security Weakness: Network management weaknesses leave Fedwire more vulnerable to service failures.

The GAO notes that 1) the Federal Reserve Communications network does not have totally redundant backup, 2) computer center staff performed duties associated with software development and management of the network and 3) monitoring of the network appeared to be accomplished by using hard-copy reports rather than using the information on real-time display terminals. Clarification is provided for all these statements.

Regarding the issue of totally redundant backup, all new processors added to the network contain redundant components as well as redundant memory. With respect to the risk of not being able to transmit electronic funds transfer data between Federal Reserve banks if nodal processors become inoperable, the System Communications Center (SCC) maintains back-up equipment that provides recovery for all nodes on the network. In the event of a failure, the backup node is loaded with an image of the failed node software and the site is connected to the back-up node through high speed dial connections. These backup and recovery procedures are tested quarterly with each site and have been used successfully in production when required. The reliability of the network and the adequacy of its backup can be demonstrated by the availability statistics. In over seven years of operations, the FRCS-80 network has maintained an availability in excess of 99.99 percent uptime. In addition, the Federal Reserve System is analyzing alternatives to a successor network.

The GAO notes that the network management staff had the ability to make changes to sensitive Fedwire information. Controls have been put into place to ensure that network management staff cannot make such changes.

Finally, real-time terminal displays are and have always been used to monitor the FRCS-80 network, and recently have been enhanced further. Hardcopy reports are used for archival purposes, not for network monitoring.

For Release on Delivery
9:30 a.m., EST
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Testimony by

Wayne D. Angell

Member, Board of Governors of the Federal Reserve System

before the

Subcommittee on Telecommunications and Finance

of the

Committee on Energy and Commerce

United States House of Representatives

February 21, 1990

Mr. Chairman and members of the Subcommittee on Telecommunications and Finance, I am pleased to appear today to discuss with you issues related to the security of large-dollar value electronic funds transfer systems and the influence of technology on the future development of these systems. The security of funds transfer and financial message processing systems is the subject of the General Accounting Office's January 1990, report Electronic Funds Transfer: Oversight of Critical Banking Systems Should Be Strengthened.

My testimony is divided into three parts and addresses topics identified by the Subcommittee as being of particular interest. First, I will provide an update on progress with respect to implementation of the GAO's recommendations addressing security on Fedwire, the large-dollar funds transfer system operated by the Federal Reserve Banks. Second, I will provide the Board's views on the need for clarification of its authority to oversee other funds transfer and financial message systems, such as CHIPS and S.W.I.F.T. Finally, I will provide a broader perspective on future technology trends as they will influence the international financial marketplace, with particular reference to payments networks.

As background to the update on the Federal Reserve's response to the GAO recommendations regarding Fedwire, it may be useful to highlight three distinguishing features of this system. First, the modern technology base that serves as the automation "platform" for Fedwire has evolved from decades of experience in

applying new technology to meet business requirements. The electronic transfer of reserve balances on the books of the Federal Reserve Banks began in 1918, using the telegraph. Today, the Federal Reserve uses state-of-the-art computers and data communications to operate Fedwire and is investing in research and development to ensure that the most current technology is used effectively, with a strong focus on security. Second, Fedwire is truly the nation's funds transfer system. All depository institutions have access to Fedwire and the Reserve Banks currently connect over 11,000 endpoints in all parts of the nation. These endpoints include the smallest to the largest depository institutions. As a truly national payment system, Fedwire must be responsive to a variety of needs presented by depository institutions having diverse characteristics. Third, Fedwire is the chief vehicle for effecting immediate final settlement for U.S. dollar payments, that is, the irrevocable transfer of value on the books of the Federal Reserve Banks, regardless of whether the payment originated domestically, or in London or Tokyo and was sent through a U.S. banking office. In short, when describing the role of Fedwire for settling interbank dollar transactions, it is no exaggeration to say that "the buck stops here."

As noted in the Board's November 9, 1989, response to GAO's draft report on oversight of electronic funds transfer systems, the Federal Reserve is strongly committed to providing the most secure electronic payment services possible. Such a commitment is essential in the case of a funds transfer system like Fedwire that handles about 240,000 transfers each day with

an average value per transfer of $3.1 million. We believe that it is important to begin any discussion of Fedwire security, as did the GAO, with the statement that there have not been any reported incidents (I can say with assurance no incidents) of fraudulent transfers by the employees who operate the system. Moreover, in the case of Fedwire, the same holds true for so-called interloper fraud.

The Federal Reserve's commitment to security begins with a sound Fedwire security "architecture," or unified structure of security safeguards and features which, in combination, define an organization's approach to security. The Federal Reserve security architecture incorporates a wide range of safeguards, which total over 100. These safeguards are, by the way, the result of our work with an outside consultant. To put the GAO recommendations in the proper perspective, it is important to understand the Federal Reserve's overall security architecture. I would now like to take a few moments to describe the safeguards and mechanisms that protect the Fedwire system within the overall security architecture.

The Fedwire safeguards are grouped into the following categories:

-- Physical security - to limit access to terminals and computer operations areas to those individuals who require access to perform their duties. Guards, surveillance equipment, and card key access devices are relied upon to prevent and detect unauthorized physical access to restricted computer spaces.

-- Access controls - both software and code words, to prevent unauthorized access to sensitive data and programs.

-- Encryption - to protect the confidentiality and integrity of Fedwire transactions, especially from interlopers. Nearly 100 percent of transmissions between depository institutions and Reserve Banks are encrypted and, as I will discuss later, the "backbone" communications network that links the 12 Federal Reserve Banks will be encrypted by July 1990.

-- Administrative controls - to govern employment practices, separation of duties, and software development standards.

Capacity planning and disaster recovery programs are also key components of the architecture to ensure that Fedwire provides secure and reliable services. In recent years, Fedwire computer uptime has improved steadily as a result of added attention to the need for a secure, resilient, and reliable automation environment. For example, in 1987 and 1988, Fedwire computer uptime averaged 99.14 and 99.21 percent, respectively. In 1989, Fedwire computer uptime averaged over 99.71 percent. I might note that last year's uptime statistic covers the period of the October 17, 1989, San Francisco earthquake. As a result of careful preparation and skillful action on the scene, the Federal Reserve Bank of San Francisco was able to recover operations quickly after the earthquake with no disruption to electronic payments processing.

We welcome the opportunity to refine the implementation of the security safeguards that make up the Fedwire security architecture by responding to the recommendations recently made by the GAO. The GAO's recommendations represent opportunities to tighten further the implementation of a very solid security architecture.

We agree fully with 15 of the 17 GAO findings. In 12 of the 15 cases, full corrective action has already been taken. Corrective action for the other three findings will be fully completed by the end of June. Moreover, steps are being taken to ensure that the conditions leading to the GAO's findings do not exist at the eight Reserve Banks that were not reviewed by the GAO.

The Federal Reserve's internal oversight of security is being focused to ensure that appropriate attention is given to the issues raised by the GAO. As we noted to the GAO, the Federal Reserve has for many years had a program of internal oversight based on independent operations review, financial examination, and audit staffs at both the Board and Reserve Banks. The Board's operations review and financial examination programs will scrutinize Fedwire security in these areas during 1990. Additionally, every Reserve Bank's internal audit function will perform a review of the Fedwire system, including security, to be completed by mid-year.

Two specific GAO findings relating to 1) the separation of duties between computer and network operators and 2) hardware redundancy on the "backbone" network linking the 12 Reserve Banks, may be due to some confusion regarding how Fedwire

security is implemented in these areas. The GAO report indicates that there should be a complete separation of duties between computer and network operators. Our view is that combining these functions has no detrimental effect on security and is industry practice. Adequate hardware redundancy already exists on the "backbone" communications network as part of a comprehensive and sound backup plan to provide quick recovery for the failure of any network component. This backup plan, which is tested quarterly and has been used successfully in production, has contributed to our network availability record of over 99.99 percent since the network was implemented in 1982. A detailed discussion of our response regarding network backup is appended to the GAO report.

The GAO also makes two systemwide recommendations. First, the GAO recommends that the Board require annual external reviews of Fedwire security. We agree that it is useful to engage the services of outside consultants to assess security. We believe, however, that such outside consultation can best be used when conditions support such a need, as opposed to regular annual consultations. The System has a history of employing outside technical consultants to assess security, as I already noted in the case of the development of the Federal Reserve's security safeguards. More recently, an outside assessment of Fedwire security has just been completed at the Federal Reserve Bank of New York. An outside consultant specializing in security performed a risk assessment of the Bank's Fedwire operations, including both automation and business areas. Use of a firm with specialized security expertise is intended, in part, to introduce

a view that is unconstrained by acceptance of traditional safeguards. It is a way to take a "fresh look" at what we do. The results of this security review will be shared among all the Federal Reserve Banks. In addition, the Board retains a public accounting firm each year to review a range of operations review and financial examination procedures. This year, the firm will review electronic data processing, including a review of security. We will continue to employ consultative services such as these when, based on management judgement, the circumstances warrant such input.

The GAO's second systemwide recommendation is that the Federal Reserve use both encryption and message authentication (known as MAC or message authentication codes) to enhance security. As noted earlier, nearly 100 percent of Fedwire links between Reserve Banks and depository institutions are already encrypted. Further, encryption of the "backbone" network will be completed by July 1990.

The Federal Reserve has made significant resource investments in studying the use of message authentication codes for Fedwire. These investments include active participation on American National Standards Institute study groups to develop bona fide national standards for message authentication and the complex process of key management that is a necessary part of a message authentication system. On a large network with a variety of endpoints, such as Fedwire, use of message authentication codes must take place in a manner consistent with approved technical standards for both authentication and management of authentication keys. Reliance on national standards is important

in order to avoid unique technical solutions that ultimately raise the costs of the depository institutions connected to Fedwire. Further, commercially available solutions that are cost effective for the range of depository institutions that use Fedwire must be available.

The first phase of a Federal Reserve effort to test emerging commercial message authentication code products that meet national standards has just been completed. These tests have not uncovered any technical impediments to the use of message authentication codes on Fedwire. With the results of this phase of our program to investigate message authentication codes complete, plans to adopt message authentication as an additional security enhancement for Fedwire are currently under review. Adoption of message authentication on Fedwire has my strong personal support.

I will now turn to the GAO recommendation that the Federal Reserve Board work with other central banks and bank supervisory authorities to ensure effective oversight and regulation of the S.W.I.F.T. system and similar systems that serve the international banking community. S.W.I.F.T. processes a large volume of payment orders that result in the transfer of very large sums between depository institutions, both domestically and abroad. S.W.I.F.T. differs from Fedwire and CHIPS, however, in the manner of settlement for these payment orders. In Fedwire, payment orders result in virtually instantaneous debits and credits on the books of the Reserve Banks without any independent action on the part of the sending or receiving bank. Similarly, CHIPS messages are settled

virtually automatically at the end of the day. Payment orders sent over S.W.I.F.T., on the other hand, must be settled independently of the S.W.I.F.T. system through correspondent accounts or through Fedwire or CHIPS transfers. In this regard, S.W.I.F.T. is only one of a number of different means that banks use to communicate payment orders. Payment orders may be transmitted telephonically or by data transmission, using a variety of providers of telecommunications services.

For any system used to transmit payment orders that may result in the transfer of large sums, however, a depository institution receiving the payment order should be responsible for verifying the authenticity and the content of the payment order before acting on it. A proposed new Article 4A to the Uniform Commercial Code makes it clear that depository institutions are liable if they act on unauthorized payment orders unless they use commercially reasonable security procedures. In some cases, a receiving bank may have sufficient confidence in the controls and the integrity of the system through which it receives payment orders to rely on this system's authentication and verification procedures. In other cases, a depository institution may wish to verify and authenticate payment orders by means of its own procedures.

We believe that the appropriate role of bank supervisors is to ensure that depository institutions maintain adequate authentication and verification procedures and that they do not rely on others to perform these critical functions without assuring themselves that these functions are performed adequately. Ordinarily, the supervisory focus should be on the

institution receiving a payment order rather than on a telecommunications system transmitting the order. Where a receiving depository institution relies on an authentication procedure provided by a telecommunications service provider, such as CHIPS, we may need to be able to examine the communications systems on which they rely in order to assure ourselves that depository institutions are not delegating these functions inappropriately. At the same time, however, we do not want to encourage depository institutions to delegate these functions to service providers merely because the service providers enjoy some degree of federal oversight. We will continue to monitor and evaluate bank reliance on telecommunications systems, including the S.W.I.F.T. system. When we discover problems stemming from banks' reliance on telecommunications systems we will take steps to strengthen our supervisory oversight and, where appropriate, coordinate any regulatory activities with supervisory authorities or central banks in other countries. We believe, however, that the principal responsibility to authenticate payment orders lies with the banks receiving these orders.

The Subcommittee has also asked for the Federal Reserve's broader perspective on the importance of technology in the future of the international financial marketplace. We expect a continuing and increasing reliance on automation and communications to provide secure, reliable, and efficient payment services. In our discussions with central bankers from other developed nations, it is evident that their approach to using advanced technologies for payment system applications is quite similar to that in the U.S. Most of the G-10 countries and

Switzerland have state-of-the-art computer systems with many of the features found in comparable U.S. banking systems. These systems rely on sophisticated computer systems, sound test procedures, and advanced recovery features designed to provide high availability. Generally, the same technology used in the U.S. for encryption, physical security, and access control is available in many other nations. As the cost effectiveness of automation improves, the use of advanced automation and communications technologies will continue to grow. Even today, the technology is available to link international financial markets around the clock.

The benefits and promise of this advanced technology, however, can only be achieved through its careful management. As payment systems become more reliant on sophisticated technology to deliver basic functions, the consequences of a systems failure or security breach is expanded significantly. We believe that close attention by senior management to automation planning, disaster recovery, and security is essential.

In conclusion, we are confident in the security architecture surrounding Fedwire and in this system's ability to provide high reliability in a secure environment. We appreciate the analysis conducted by the GAO and, in most cases, we agree with the findings and have moved quickly to correct the problems that have been identified. As I stated at the outset, the GAO's findings represent an opportunity to tighten the implementation of a security program that we believe is exceptionally sound.

Q.4. In recent weeks reports have surfaced in the Massachusetts media suggesting that for a variety of possible reasons a credit crunch appears to be developing. The Associated Industries of Massachusetts (AIM) conducted a survey on this issue and has indicated a significant problem for many of its members. AIM indicates a number of cases in which solid companies may be losing the credit they have used for years to keep their companies functioning.

I am very concerned that federal policy be sensitive to the credit needs of Massachusetts. We must be careful that we do all that is possible to fuel a rapid recovery and not starve growth and produce a longer and deeper economic downturn than would otherwise occur.

Massachusetts businesses need to know that if they operate prudently they will be able to get the credit they need to grow. We need a predictable supply of capital that is being soundly managed by our financial institutions according to tough but reasonable federal standards with careful oversight.

Does the Fed believe that Massachusetts is facing a credit crunch that could threaten business growth and community economic stability or not? If so, is there anything that can or should be done at the federal level to prevent this from occurring?

A. 4. The Federal Reserve is aware that banks in the New England area, as well as in other areas of the country, have tightened their credit standards in recent months for certain types of credits in response to changing economic conditions, increasing levels of nonperforming assets, and on-going scrutiny by regulatory agencies. Such tightening could reduce the amount of credit provided to businesses and consumers in those areas, with potential effects on the level of local economic activity. Any tightening might well be more visible and felt more quickly in states like Massachusetts, which have enjoyed relatively rapid growth during recent years. In order to threaten regional economic stability, however, any reduced lending would most likely need to be prolonged and more severe than we have been able to detect.

The Federal Reserve conducts surveys periodically to gain insights into the views and lending policies of banks throughout the country. A survey in January of 60 large banks indicated that during the past

6 months a large majority of the respondents had become less willing to make construction and land development loans, while about one-fifth of them were less willing to extend overall business credit. Most banks had also tightened their credit standards for merger-related loans and for loans to borrowers with lower than investment-grade ratings. Less than 10 percent of the respondents indicated any tightening of standards for nonmerger-related loans to investment grade firms. Generally, the respondents cited less favorable economic conditions as the most important factor leading to their policy change. Other factors cited, in descending importance, were industry-specific problems, a deterioration in the quality of their overall loan portfolios, capital adequacy concerns, and regulatory pressures.

Nationwide aggregate statistics on bank lending (seasonally adjusted) indicated virtually no loan growth in December and January but an annualized increase of 5.3 percent in February. By comparison, the average rate for 1989 was 7.6 percent. Regional conditions vary, of course, from these overall patterns. Recently, loan growth in the Northeast and the Southwest has been weaker than national averages.

When considering the effects of any reduced lending activity by banks and the appropriate policy response, it is useful to remember that the United States is enjoying the longest period of peacetime economic growth in its history. At this time, some retrenchment may well be expected, especially in those geographic and economic sectors that have experienced rapid growth and whose banks are affected by high levels of nonperforming assets.

The large losses reported throughout the 1980s by thrifts and more recently by commercial banks suggest that financing activity in the real estate industry, in particular, has been excessive. In some cases, these losses reflect deficient lending and appraisal standards that should be strengthened and that have been and are being addressed by banks, the Congress, and the supervisory agencies.

As both the nation's central bank and a bank supervisory agency, the Federal Reserve continually monitors bank lending practices. It is essential that banks be willing and able to meet the financing needs of their communities, but they should do so prudently. As recent experience has shown, there are substantial costs associated with both too much

restraint and with too little; we are attempting to strike the proper balance.

Chairman Greenspan subsequently submitted the following in response to a written question from Senator Pressler in connection with the hearing held on February 22, 1990.

Question: In your prepared statement on page 13 you refer to "huge stocks of financial claims" that include more than $1.5 trillion held in the United States by foreigners. This brings to mind an editorial that appeared in the Rapid City Journal (Rapid City, South Dakota) of January 28, 1990 that is critical of our tax policy with respect to foreign investors. A copy of the editorial is attached. It refers to observations you are said to have made concerning the policy of not withholding taxes in this situation, which I would appreciate your elaborating upon or clarifying. Does our need to finance the national debt affect the collection of taxes due the United States?

Answer: In the Deficit Reduction Act of 1984, Congress provided for a statutory exemption of interest received on portfolio investment in the United States. This exemption covers interest received by foreign investors in U.S. Treasury securities as well as in U.S. corporate debt instruments.

Prior to the enactment of this statutory exemption, only a small amount of tax revenue was raised by the U.S. tax on interest payments to foreign investors. The low level of tax revenue from the U.S. tax on foreign investors' U.S. interest earnings has been attributed to the particulars of preexisting U.S. statutory treatments, tax treaties, and regulatory policies. Preexisting statutory exemptions included interest paid to foreign depositors on their accounts in U.S. banking offices. Income tax treaties eliminated tax on a reciprocal basis. For example, the U.S. statutory rate of 30 percent was reduced to zero under treaties with West Germany, the Netherlands, and the United Kingdom. The most important regulatory policy involved the acceptance by U.S. tax authorities of the use by U.S. corporations of Netherlands Antilles subsidiaries to avoid taxes.

The above explains why the U.S. tax on foreign investors' U.S. interest earnings yielded little tax revenue. Such explanations have led some to propose the elimination of statutory exemptions and the overriding of tax treaties. It is argued that such

actions would produce an environment in which foreign investors would be appropriately and effectively taxed on their U.S. interest earnings. Opponents of the proposals point out that if the supply of foreign savings to the United States is very sensitive to after-tax rates of return, then the imposition of an effective tax on foreign investors' U.S. interest earnings would require a rise in U.S. interest rates to attract foreign savings. In that way, an effective tax might have large costs associated with it. Obviously, the possible costs of such a tax have risen in line with the increase in U.S. demand for foreign savings.

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